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Some Neurological Aspects OF OPHTHALMIC CASES.

Being the Presidential Address delivered before the Section of Ophthalmology of the Royal Society of Medicine on Nov. 12th, 1920,

BY JAMES TAYLOR, C.B.E., M.A., M.D. EDIN., F.R.C.P. LOND.,

PHYSICIAN TO NATIONAL HOSPITAL FOR PARALYSED AND EPILEPTIC, QUEEN-SQUARE; CONSULTING PHYSICIAN TO MOORFIELDS EYE HOSPITAL AND TO QUEEN'S HOSPITAL FOR CHILDREN.

I NEED hardly say that I feel greatly honoured by my election to the presidency of this section. I must, however, confess to a feeling of not a little diffidence in taking up the duties of the post. To be the first physician invited to preside over a section so largely surgical as this is is no small honour, but it seems to me to carry with it great responsibility and may require great indulgence on your part. I do not think I am at fault in thinking that my election is to be regarded as a recognition of the desirability—nay, the necessity—of close coöperation between the ophthalmic surgeon and the physician; this necessity was impressed upon me very early in my neurological work, and was clearly recognised by the last generation. It is rather interesting in this connexion to remember that when Moorfields Hospital was first established in Charterhouse-square in 1804 it had as its staff a surgeon, Dr. Saunders, and a physician, Dr. Farre. Apparently the surgeon was not allowed to prescribe medicine, and the physician's duties consisted chiefly in ordering ointment and aperients, although he saw out-patients as the surgeon did. The elder Dr. Farre was succeeded as physician by his son, and he in turn by Dr. Martin, whose immediate successor was Sir Stephen Mackenzie, who was a colleague of mine for some years. The long service which the physicians were able to give is noteworthy. The elder Dr. Farre was on the staff for 50 years, his son for 37, Dr. Martin for 28, and Sir Stephen Mackenzie for 21. When Sir Stephen Mackenzie was appointed an era began in which cases seen by a surgeon were referred to the physician for medical report. This naturally led to investigation—especially ophthalmoscopic investigation—and Sir Stephen Mackenzie's work on the ophthalmoscopic changes observed in anæmias are familiar to all of us. It was in 1899 that I had the good fortune to be associated with him as physician to Moorfields, and it is interesting to know that every ophthalmic hospital in London now has a physician on its staff.

I wish to allude in a somewhat cursory way to some of the subjects in which ophthalmic surgeons and physicians have a common interest; and I should like to consider this under three headings: (1) some ocular palsies; (2) visual failure; and (3) defects in the visual fields.

Ocular Palsies.

I have been struck with the varied conditions under which ocular palsies occur. It is said that sixth-nerve paralysis frequently occurs as a result of cold. I have always had grave doubts of this, because I have seen more than one case of isolated sixth-nerve paralysis supposed to result from cold, and following exposure more or less definite, in which the subsequent course of the case showed that the sixth-nerve paralysis was really the initial sign of some general condition—in one case disseminated sclerosis, in another tabes, and in yet another encephalitis lethargica. And when one considers how rarely, if ever, sixth-nerve paralysis is associated with ordinary Bell's paralysis (facial paralysis)—admittedly the result of exposure to cold air, draughts, &c.—it is hardly likely to be the case that sixth-nerve paralysis without paralysis of seventh often results merely from cold. Personally I have never seen sixth-nerve paralysis associated with ordinary facial paralysis, but, as I have said, I have frequently seen isolated sixth-nerve paralysis the initial sign of what afterwards became a widespread affection of the nervous system.

Isolated third-nerve paralysis is a fairly common affection. In nine cases out of ten it is probably syphilitic in origin. It may occur without other signs of nervous disease, and clear up completely under appropriate treatment. It may also occur in cases of tabes or general paralysis, and there also it may completely disappear under treatment. It may be assumed to be the result of gummatous formation in the nerve sheath, for the presence of a chronic degenerative disease, like tabes or general paralysis, does not at all preclude the possibility of the development of manifestations of active syphilis. In some cases of intracranial growth third-nerve paralysis is an initial sign, but it is not common to get this alone; other nerves are usually involved as well, a fact easily understood when the anatomical relations, both of the nerve and of its nucleus, are remembered. And it should be kept in mind that in some cases of pituitary tumour such paralysis is present, although the classical signs of intracranial growth may be absent. I need only mention those curious cases of so-called migraine ophthalmoplegique—severe headache, usually one-sided—with paresis of the third nerve, which under the influence of repeated attacks becomes permanent paralysis. These cases are obscure in origin, for they go on for many years and may yield only rare post-mortem information. But in some of them actual involvement of the third nerve, either in growth or in inflammation, has been found.

Perhaps the most common affection of ocular movements is from a mixed affection of ocular nerves. Such an affection is common in diphtheritic paralysis. It is also frequent in encephalitis lethargica, but in some of these cases I am convinced that the affection is very slight; it is then usually transitory, and the patient may make a complete recovery. Myasthenia gravis frequently comes under the notice of ophthalmic surgeons, and in this disease the ocular nerve affection is usually striking, because it is often so complete—double ptosis and almost complete paralysis of ocular movements. It is also striking because of its occasional, if temporary, complete or partial disappearance, and thus tragic mistakes have not infrequently been made of regarding such cases as "hysterical" because of this extraordinary variability. I think one cannot be too careful in regard to the diagnosis of hysteria in cases of ocular paralysis. In more than one instance I have known cases of myasthenia gravis mistaken for cases of hysteria, and I have known the same mistake made with reference to cases of disseminated sclerosis in which ocular paralysis, sometimes of only one sixth nerve, has been the earliest sign. Graves's disease is one of those conditions in which weakness of ocular movements is frequently present and sometimes very persistent; and I have known it present long after the characteristic signs of Graves's disease have disappeared. I have also known—although I think this must be unusual—a patient with Graves's disease come for advice because of diplopia without any complaint of other symptoms. I need only just mention cases of cavernous sinus thrombosis, familiar, I fear, to most ophthalmic surgeons, as another group of cases in which ocular palsies occur.

Visual Failure.

I should now like to say a few words about those cases of visual failure associated with widespread affection of the nervous system. Cases of impaired vision naturally seek advice at an eye hospital, and if there are any here who did me the honour to come to my out-patient clinic when I was still seeing out-patients at Queen-square they may remember the extraordinary number of patients attending there who were suffering from tabes or general paralysis with optic atrophy. I was fortunate to have these cases; they were mostly referred to me by my colleagues at Moorfields. When I see a case of optic atrophy in a patient who has signs of tabes—loss of knee-jerks and lightning pains, and without ataxy—I am always apprehensive that such a patient will sooner or later develop the signs of general paralysis. I have seen this so often that perhaps I needlessly anticipate it.

For such a development is not invariable. The case may really be one of tabes, but it is remarkable how rarely ataxy is superadded, and the converse is true of ordinary cases of actual ataxy in walking, optic atrophy rarely appearing in such cases. But I think ophthalmic surgeons will agree with me that tabetic optic atrophy—so-called grey or primary atrophy—nearly always leads to complete blindness, usually in a very brief period of time. Let me here remark on the curious difference between this form of optic atrophy and that pallor of discs which is so very common in cases of disseminated sclerosis; I think it is now generally acknowledged that the cause of disc pallor in disseminated sclerosis is an antecedent retrobulbar neuritis. There is frequently a history of temporary obscuration of vision, the result doubtless of a patch of inflammation in the nerve behind the eyeball; but it is sometimes impossible to get a history of such temporary obscuration, and one must then suppose that the primary affection was very slight and of short duration. But disc pallor supervenes, usually much more of the temporal side of the disc, but not infrequently general in character. The striking thing to me is that in such cases you may often have extreme disc pallor with 6/5 of vision. And in contrast to the optic atrophy of tabes such atrophy never proceeds to blindness. At all events, I can say that I have never seen a patient with pale discs in disseminated sclerosis completely blind. I have known blindness in one eye following an unusually severe attack of retrobulbar neuritis, but blindness of both eyes never. One has also to remember that optic neuritis may be present in disseminated sclerosis, no doubt identical in causation with the neuritis which does not show itself at the disc, and in rare cases this may be the only obvious sign of the disease. I can recall a case sent to me by Mr. J. B. Lawford with slight optic neuritis in each eye. The patient was a young lady of good physique, living under very healthy conditions, who had sought his advice because of some impairment of vision. The only other sign of nervous disease when I first saw her besides the optic neuritis was an extensor plantar response on one side, but within 18 months she had developed all the classical signs of disseminated sclerosis, and she died less than two years from the onset of her eye trouble. I need only just allude to that curious fact, now, I think, familiar to all of us, that optic neuritis is so often present, even in cases of intracranial tumour without any detectable impairment of vision and without any complaint of visual failure on the part of the patient. It is a fact of, I think, immense importance and of great interest, and its discovery is perhaps the most valuable contribution made by a physician to ophthalmology.

Defects in Visual Fields.

I should now like to say a few words about the defects in visual fields which are probably equally familiar to ophthalmic surgeons and physicians, although I am bound to say that physicians do not seem to be quite so quick at recognising their existence, possibly because they are not so familiar with their importance. I remember on one occasion sending into hospital a patient who had been suddenly seized with weakness of the left leg and left arm, and who I found also had left homonymous hemianopia. After her admission to hospital I saw her with the house physician. By that time the weakness of the arm and leg had almost passed off, and the house physician, with due diffidence, I must say, suggested that the condition had been, and was, a functional one. I asked him about the fields of vision. He had not thought of them, and I was easily able to convince him that definite homonymous hemianopia was still present. I may say that I know that this still persists in the patient, although it is now several years since her attack; this leads me to remark how rare it is for hemianopia to disappear. I have seen two cases in which complete clearing up of homonymous hemianopia took place. One case, sent to me by Mr. Percy Flemming, was that of a girl aged 15 in whom hemianopia appeared after an attack of scarlet fever. We both verified the presence of the condition, but Mr. Flemming saw her about a year later and found that it had entirely disappeared. The other case was one sent me by Mr. J. H. Fisher. This was an old but very clever lady who had not only left hemianopia, but also repeated slight Jacksonian fits, and remained in a precarious condition for several weeks. The fits ceased, but the hemianopia was still present; finally this also completely cleared up, although the clearing up was preceded by curious hemiopic hallucinations such as have been described in some cases. The hallucination in this case was of a little girl looking over the patient's left shoulder as she read—a definite but pleasing hallucination in her blind fields. This gradually faded away—much to the patient's regret—as the field was restored. I may mention in explanation of her regret for the pleasant lost hallucination that this lady was the happy mother of many daughters and of several sons. After this attack she lived for several years in good health.

I think it is very important to be on the outlook for quadrantic or other sectional defects. They are quite easily missed, at all events by physicians, and I have known cases in which the visual difficulty complained of by patients was put down to "liver," or some equally vague cause—cases in which careful examination with the perimeter would have revealed the presence of a partial homonymous field defect.

I need only briefly refer to the field defects in pituitary cases, usually, of course, of both temporal fields. It is strange how often a patient with temporal hemiopia in one eye presents himself or herself when the other eye has become completely blind. It is to be presumed that the patient has only discovered the visual trouble when one eye has become blind or the seriousness of whatever visual inconvenience has been experienced has not been earlier recognised. But we can often obtain from such a patient a clear history that the nasal field of the now blind eye had been present when the temporal field had gone. X rays now help us greatly in the diagnosis of such cases. I need not refer to other features in the symptomatology of these cases, but I think many of you must have been struck, as I have been, with the curious variability in their response to treatment by organic extracts. I have known more than one case in which extraordinary improvement has taken place after treatment with thyroid. I have known others in which pituitary extract has been equally efficacious, and Mr. Fisher has told me of a case in which first thyroid and subsequently, after a relapse, pituitary was efficacious in clearing up the symptoms. The question of operation in some of these cases is an extraordinarily difficult one. If there is any chance of the condition being cystic, operation has some chance of success; if it is a glandular hyperplasia—and, of course, I have known many cases quite untouched by such treatment—treatment by organic extracts would be called for and operative measures would probably be unsuccessful. Yet if the patient were in urgent pain, as in some cases I have seen, I should feel strongly inclined to advise an exploratory operation in the hope of giving at least relief. It is rather remarkable in these cases how rarely optic neuritis is present. It is nearly always a primary atrophy, I suppose from pressure. Personally I have only seen one case with symptoms of pituitary tumour with optic neuritis; this case I saw a good many years ago through the kindness of Mr. Richardson Cross, and I understand the patient afterwards became quite well.

It would be rather fascinating to go on and consider the suggestions recently made by Mr. Fisher as to the connexion between Leber's atrophy and pituitary changes. Some of you may remember that I brought forward evidence which seemed to lend support to his views. It would also be interesting to consider his somewhat revolutionary ideas as to the causes of migraine, although I think any evidence I would offer in regard to this would certainly not support his very original views on this subject. But I feel I have said enough, and I would only in conclusion venture to express the hope that physicians and ophthalmic surgeons during this session of our section may learn much from each other.

An Address
ON
THE MAN *VERSUS* THE MICROBE.

Given before the London Dermatological Society

BY SIR WILLIAM J. COLLINS, K.C.V.O., M.D., M.S. LOND., F.R.C.S. ENG.

THERE are those who affect to scoff at specialism, but in applied biology, which medicine is, as in all other departments of science, there is a great credit standing to the specialists who have enlarged the boundaries of knowledge, enriched our vocabulary, augmented our libraries, and swelled our periodical publications. We may not accept without reserve the advice of Mephistopheles to Faust that as it is manifestly impossible that one man can learn every science, "who learns the utmost that he can does well, the secret of our art is self-reliance"; yet we may appraise the mutual advantages which the division of labour in scientific inquiry and advancement of knowledge have bestowed the one upon the other.

Specialisation in Dermatology.

An interesting and chequered history has attended the gemmation of dermatology from the parent stem of scientific medicine and pathology. Time was within living memory when such a specialty was viewed with disparagement, and even suspected of complicity with empiricism by the orthodox. Physician and surgeon alike contended for its retention within their respective allotted territory, and united in resisting its severance from both and its erection into a specialty of its own. When the infant department at length struggled into existence at a general hospital it was not unusually confided to some assistant physician or surgeon whose distinctive qualification was often not his superior devotion to dermatological study, but the fact that his colleagues had not allotted to him any other particular activity within the hierarchy of the medical school. Let us, nevertheless, gratefully recall the classical lectures on skin diseases of my old and revered friend, Sir William Jenner, which sold out the numbers of the *Medical Gazette* in which they were published, and also the lectures of Jonathan Hutchinson at the College of Surgeons which so profusely illustrated dermatological diagnosis—conspicuous instances of the successful labours of the general physician and surgeon respectively in the specialty which this society exists to advance. It would be difficult to postulate any argument in favour of a separate specialty for eye, ear, nose and throat, or nervous system which could not with equal propriety be urged on behalf of similar specialisation for the skin. In health the skin presents a wonderful study of protective, thermo-regulative, excretory, and tactile and other sensory functions, apart from its beautiful appendages of hair and nails. Of all organs it is the most extensive in superficies and opposes the largest surface to noxæ, whether physical, chemical, parasitic, or microbic. Unlike most other organs, it presents a high degree of visibility to the diagnostician, and while skin diseases occasion a maximum of distress and disquietude to their victims, their successful treatment is a source of satisfaction as profound and gratifying as any within the whole range of therapeutics.

While, therefore, we gladly recognise the helpfulness of specialisation in the invention and perfection of new means of diagnosis and in the discovery and enrichment of our armamentaria in the struggle with disease, there is need to be on the alert against its too exclusive pursuit or its exaggerated claims. It behoves us to keep the base of our specialty broad, and whilst knowing everything of something to endeavour also to know something of everything, not permitting the reputation of the specialist and expert to rest upon fastidious innocence of all domains of knowledge other than their own. There is new light to be got from a cross-fertilisation of the sciences; our conventional differentiation of knowledge has no counterpart in nature, nor is the human body compacted of water-tight compartments. The specialist is sometimes apt to be absorbed in the pursuit of little game and become lost in a maze of uninspired research. We need breadth of view; medical philosophers with insight and foresight are few and far between, and their production is hardly facilitated by the present trend of medical education and professional aspirations. Possibly the tendency to over-specialisation, to exalt the output of the laboratory over the observation of the ward, to pursue the microscopic into the metaphysical mist of the ultra-visible, has narrowed the range or fogged the clarity of our conceptions, and led to the neglect of a wider culture upon which alone a sound pathology can be based. We have, perhaps, sometimes paid too much homage to the microbe and lost sight of the man amid the magnificent and luxuriant flora and fauna of the bacteriological laboratory. That which seemed a success in the laboratory has often turned out a dismal failure in the practical test of the work-a-day world. The possibilities of environment, as I have many times observed, are not exhausted by the confectionery of the laboratory, while the potentialities of evolution and of synthetic bio-chemistry may transcend even the limits dreamt of in the philosophy of the bacteriologist or parasitologist.

Evolution and the Specificity of Disease.

It has been a favourite theme of mine since 1881, a theme in which I was encouraged by Mr. Herbert Spencer, to bring the doctrine of evolution to bear upon the specificity of disease and to suggest that we have been apt to regard micro-organisms too much in the light of their fortuitous and unfortunate association with diseases of man and too little in the light of their own life-history. The raison d'être of fission fungi in the minds of some extreme specificists would appear to be the infliction on mortals of exanthematic and other diseases; for such purposes they hold they are and were created; whereas in place of this anthropocentricity I apprehend the truer view to be that it is just so far as living tissues, under certain conditions, afford suitable soil for their growth, multiplication, and distribution that there is any relationship between the two. The soil is not less important than the seed in determining pathogenicity and in differentiating specificity. Yet, as I said in 1889:—

"If it be true that in the life-history of the lowest of organic things lie the momentous influences which determine plagues and pestilences, it is reasonable to believe that in organisms whose cycle may be less than an hour, and whose rate of propagation is incalculable, evolution must be powerfully at work eventuating in the survival of those most fitted to their environment, and that in this, as in other directions, man's influence may modify natural selection, and by acting in accordance with law may learn to conquer nature by submitting to her."

Nevertheless, even now you can hardly take up any ordinary text-book of medicine without finding the old hard-and-fast specificity theory of disease explicitly stated or implicitly inferred. As Trousseau declared, so we are told to-day, "La spécificité domine toute la pathologie, toute la thérapeutique, en un mot toute la médecine." The orthodox credo runs somewhat as follows: "I believe that diseases, especially those which are communicable, are due each to a specific microbe, which is always derived from a pre-existing similar organism in a previous case of the disease. That such specific diseases always breed true and never arise de novo. That immunity from attack can only be purchased by preventive inoculation either with the specific organism, alive or dead, or with a serum charged with a specific antitoxin derived therefrom."

On the other hand, I have long contended that specificity of diseases is relative, not absolute; that new species have evolved from time to time, that starting from common infective agency by variation and natural selection specific diversities of type may emerge, and that, instead of always breeding true, aberrant and atypical examples and nondescripts are commonly observed. That the condition of the blood and tissues of the body exposed to so-called zymotic or infective disease powerfully influences the virus of

disease to the extent of modifying, intensifying, or nullifying the morbid process, as soil influences the growth and results of the seed sown upon it. That the environment of the body may also potentially affect its vulnerability to or immunity from disease. That if the nature of the materies morbi of specific infective diseases be organic or microbic, such lowly organisms as have been causally associated with certain diseases are likely to be profoundly influenced by the soil upon which they are cultivated, and are therefore peculiarly liable to evolutionary changes in the course of their rapid propagation and multiplication. That the pathogenetic properties of such organisms or viruses may be acquired, lost, modified, or varied during their serial cultivation in living bodies or other culture media. That seeing that the possible modes of reaction of the living body to noxious agencies or influences are limited in number and nature, similar or identical symptoms may be occasioned by different pathogenetic causes; while the same pathogenetic agencies may occasion different symptoms in different persons. That the first line of defence against invasion of the human body by infective diseases is a sanitary environment, pure air and water, good food, clean clothes and houses, and that such environment not only permits but promotes healthy living, which itself tends to raise the normal resistant powers of the body and the blood.

When I promulgated such views in the eighties of last century I was told by my reviewers in the medical press that "such teaching runs counter to all the best work of modern times"; that I was "essaying with all the vigour of youth to demolish the theories of specific disease which have sufficed to satisfy the acutest physicians of this and every age"; and I was pontifically warned that when I had reached the experience of those authorities whose opinion I condemned I should be less eager to adopt them. The sequence of events, however, has not borne out the vaticinations of my critical mentors. On the contrary, I could quote abundantly from the most recent publications vindication and confirmation of my views on specificity and evolution in disease of 40 years ago.

Pathology of Contagia.

It is common knowledge that bacteriology has failed to demonstrate microbic causes in some of the most typical infective specific diseases, and the view is now being accepted in some quarters that the intimate nature of contagia may be rather of the character of an organised or unorganised ferment, or something neither vegetal nor animal, on the borderland of the organic and inorganic, capable under suitable conditions of gathering pathogenic properties de novo and liable to specific differentiation, according to the soil upon which cultivation takes place. Light may not improbably be thrown on the intimate pathology of contagion by study not only of fermentive processes but of katalysis and contact actions, from which chemico-physics is deriving new and astonishing results.

The study of so-called "deficiency diseases," together with the vitamine hypothesis, has assisted in calling attention to novel and far broader views in ætiological pathology. The almost exclusive search for the last two or three decades of positive extrinsic causes, such as microbes, for all so-called specific diseases of man and animals has made it difficult for some minds even to contemplate a negative nutritional explanation of diseases with such characteristic symptoms as scurvy, beri-beri, rickets, pellagra, and kerato-malacia. It is therefore refreshing to find among orthodox pathologists the acceptance of such non-microbic causation of specific diseases. Even in disease in which the presence of a parasite is indubitable, the modus operandi may be both non-specific and yet highly characteristic. Take scabies, for example, with its polymorphism of papules, vesicles, excoriations, and pustules; do these phenomena constitute a specific disease? May not a similar question be asked in the case of some diseases which are also associated with vegetal or animal parasites?

Conclusion.

But to return to my theme of specificity and evolution in disease, of the man *versus* the microbe, or the importance of soil as well as seed; I rejoice to find in recent literature ample confirmation of my severely criticised thesis of 40 years ago. Writing on the transmutation of bacteria, Dr. S. Gurney-Dixon observes that "No single property of bacteria can be regarded as specific," and that the pathogenesis attributed to an organism may be dissociated from it. Again, almost repeating my words, he says: "Species of bacteria have developed from a common stock. In the case of some of them the differentiation dates from a remote past and the specific characters are comparatively fixed. In the case of others differentiation is of more recent date and the newly acquired characters are less permanent and 'reversion' in one or other character is more frequent." Yet again, "there is no reason to doubt and abundant evidence to support the opinion that in this field of life, as in others, the forces of natural selection and the survival of the fittest have been at work and have resulted, in the course of ages, in the evolution and differentiation of the various types of bacteria which we recognise and distinguish to-day. ..... It is reasonable to expect that amongst the bacteria natural variation would occur with greater frequency than amongst higher forms of life; ..... such variations would be more readily noted in their case, since as many as 30 or 40 successive generations may be observed in the course of 24 hours." Not only does the light of evolution help us to understand the genesis of specificity in disease, and to recognise the potency of environment upon health, of soil upon unicellular organisms associated by parasitism with pathogenesis, but also by realising that the metazoa, including mammals and man, are the "heirs of all the ages." This truth recalls to us the affinities of the highest with the lowliest whose cells have never entered upon colonial life, as seen in inflammation and reparation in neoplasms, benign and malign; in the case of the latter helping us to elucidate them by the study of embryonal reversion of cell-type and of bastard forms of conjugation and reproduction.

I close as I began by pleading for breadth of view and a wide and philosophic pursuit of the basic principles of our science and art. The wise pathologist should be a man "willing to listen to every suggestion, but determined to judge for himself. He should not be biassed by appearances, have no favourite hypothesis, be of no school, and in doctrine have no master."

CANCER OF THE COLON:

ITS CAUSATION AND TREATMENT.[1]

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BEFORE passing on to consider the operative treatment of cancer of the large bowel, which is the subject of this discussion, it is of vital importance that we should, in the first instance, endeavour to obtain a thorough grasp of the factors which determine the development of cancer in this situation, not only with a view of arriving at the best methods of treating it when it exists, but especially for the much more important purpose of diminishing the incidence of this deadly scourge, which apparently claims a larger number of victims every year. If we can obtain a clear idea of the conditions which antedate and produce cancer of the large bowel we may be in a position to control or prevent its development. Is any problem more important to the community or more interesting to us as individuals than this?

Causal Factors of Cancer in the Large Bowel.

The causal factor which is common to cancer in any part of the body is "traumatism," using the word in its widest sense. Another factor is a degenerative change in the tissues of the body, brought about in the vast majority of cases by the products of intestinal

[1] Comprising remarks on the discussion of the Surgical Treatment of Malignant Disease of the Colon held at the Medical Society of London, Dec. 6th, 1920.

auto-intoxication or by syphilis, or by both together. The third factor I will call x, since it is at present unknown to us. It may be an organism, but we are entirely in the dark as to its nature and behaviour. Although we are ignorant of the nature of this agent, we are justified in assuming that it does not come into action except in the presence of the results of the traumatic and degenerative factors without which it cannot obtain a foothold in the tissues.

Can we prevent the incidence of x by removing the traumatic and toxic factors on which it depends? This would seem to be distinctly probable.

How can we avoid the effect of the traumatic and toxic factors of chronic intestinal stasis and syphilis? I believe that if the State were sufficiently alive to the interests of the community to take the necessary action syphilis might be very materially reduced and possibly finally eliminated altogether by legislation. It is also probable that much of the degenerative change that ensues from syphilis might be modified or even avoided by early and efficient treatment. I will not refer more fully to the influence exerted by syphilis in the production of cancer, but will endeavour to show how the traumatic and toxic effects of intestinal stasis manifest themselves, and in that way to demonstrate the means necessary to eliminate their influences.

Let us take these factors in their order. How far can we influence the most important of these—namely, traumatism? The gastro-intestinal tract affords an excellent illustration of the manner in which traumatism produces ulceration and cancer. It is necessary for the development of cancer that the ulcer should be sufficiently chronic. But as regards the tongue, the pharynx, the œsophagus, the lesser curvature of the stomach and the immediate vicinity of the pylorus—cancer develops in just such spots as are constantly exposed to injury, either in the form of impact or strain. The same applies to the incidence of cancer in the large bowel, but this we will consider more fully later. It is clear that if we can obviate the irritation of the tongue by a ragged tooth or other source of traumatism we can certainly prevent the development of cancer in this situation. We know also that if such an irritant is left to exert its baneful influence for a sufficient length of time it will almost certainly produce cancer. The development of cancer in the tongue and elsewhere is therefore largely a question of time. The same applies to cancer of the œsophagus, stomach, and large bowel, in which, however, the mechanical conditions are somewhat more complicated than in the case of the tongue.

As regards the intestinal tract, the mechanical factor is bound up intimately with the toxic factor in the condition to which I have given the name of chronic intestinal stasis. Can we learn anything from the immunity of the duodenum and small intestines from cancer? In this portion of the alimentary canal, and especially in the duodenum, we have in action the several factors that determine the presence of cancer in the rest of the intestinal tract. They are the mechanical factor, the toxic factor, and presumably the factor which I call x. That the last factor is unable to exert its influence upon an ulcer which is often very chronic in this locality cannot be due to the presence of bile or of the pancreatic secretion, since cancer develops freely in the ducts of the organs secreting these juices. Infective organisms may flourish in the diseased duodenum. Why is that which produces cancer in abeyance? Dr. N. Mutch reminds me that the area of freedom from the effects of the factor x corresponds to the distribution of enterokinase, the ferment of ferments which activates the precursor of trypsin, the secretion of the pancreas. It exists in quantity in the duodenum and in a diminishing amount through the small intestine. Has this material any influence on the factor x? If not, what is the agent that prevents it exerting its usual effect in this situation? A study of the reason for the freedom from cancer of the duodenum, and to a lesser degree of the small intestine, may unfold the secret of the mode of action of x, the unknown factor, and may throw some light on the treatment of this disease.

In chronic intestinal stasis there are two distinct factors, the primary, which is simply and solely mechanical; and the secondary, which is essentially toxic and results from the effects of the mechanica or traumatic factor.

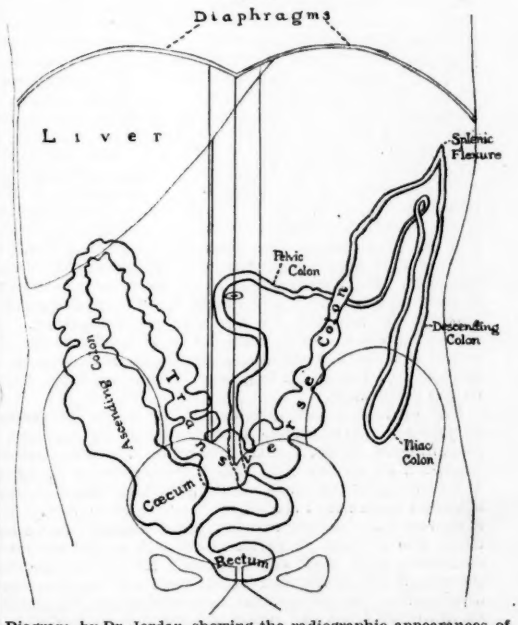
I am assuming that the reader is familiar with the condition I call chronic intestinal stasis, since I have described it so fully on many occasions during the last 20 years. The behaviour of the individual to stasis varies enormously. This variation depends chiefly on the resisting power of the subject at a time when first exposed to its influence. The vitality may be reduced by bad or unsuitable food, unsatisfactory hygienic surroundings, exposure to cold, &c. In the face of the very different opinions that are held on the subject of the treatment of stasis it is most important that we should be thoroughly familiar with every detail of the varied aspects it presents.

Stasis in a Patient with Little Vitality.

Perhaps I can put the case best by describing extreme degrees of this condition.

Take the patient with little vitality who makes no attempt to form resistances or retaining membranes, whose pelvic colon elongates enormously, whose iliac, descending, and transverse segments of the large bowel become progressively elongated, tortuous, and prolapsed, and whose cæcum and ascending colon dilate and prolapse considerably. The absence of any acquired membrane or crystallisation of lines of force tending to obviate or control the prolapse of

FIG. 1.



Diagram, by Dr. Jordan, showing the radiographic appearances of an extreme case of chronic intestinal stasis in the first group. It was taken while the patient was in the recumbent posture. It is sufficiently clear to require no further detailed description.

the several portions of the bowel is the marked feature of this variety. There is no ileal kink and probably no control by the appendix. The small intestines are dilated and their walls are thin and flaccid. If the duodeno-jejunal angle is at all abrupt the duodenum is very widely dilated in its entirety, and its walls are soft and inelastic. The pylorus is but moderately spastic and the stomach is dilated, perhaps to a considerable extent, with little or no evidence of hypertrophy of its walls. This explains the want of success of gastro-enterostomy alone in the treatment of this condition. There is very rarely any suspicion of duodenal or of gastric ulceration. The acquired band which anchors the gall-bladder to the pylorus, duodenum, and transverse colon is not developed, and gall-stones rarely complicate the condition.

In this type auto-intoxication is the marked feature, abdominal symptoms, except for constipation and

flatulence, being absent or calling for comparatively little serious attention, unless perhaps in the cæcum, ascending colon, and part of the transverse colon, the mucous membrane of the large intestine is inflamed to a varying extent, while the associated spasm of the muscular wall reduces its lumen, and allows of the passage of the intestinal contents through the bowel and over the inflamed mucous membrane in limited quantities only to be evacuated with great difficulty through the obstruction formed by a prolapsed elongated pelvic colon. This is shown clearly in an ordinary typical case in Fig. 1.

This is the condition for which surgeons have, as they suppose, modified and improved on the operation of colectomy, which I suggested for it, by effecting a removal of the cæcum and ascending colon, calling it a hemi-colectomy. They excise that portion of the large bowel in which are accumulated the fæcal contents whose passage through the rest of the colon is obstructed by the elongation, angulation, and prolapse of the pelvic colon and by the spasmodic contraction of the muscular wall of the descending and iliac colon, due to the infection and inflammation of the mucous membrane lining it. Can any procedure be more illogical?

Assuming my description of the mechanics of this condition to be accurate, and radiography has rendered it perfectly capable of ocular demonstration, what is one to think of the attempts to meet the situation by operations performed with the object of suspending or fixing the dilated, over-distended cæcum, or of shortening the mesentery of prolapsed partions of bowel, or of the fixation of the mesentery to the anterior abdominal wall, or of excision of part of the elongated transverse colon? The only excuse for the adoption of such methods is a want of familiarity with the physiology of chronic intestinal stasis and with its mechanics. The reasoning person will ask himself, Why are the cæcum and ascending colon distended, dilated, and prolapsed? The answer is perfectly obvious: they are in this condition because of the obstacle to the passage of their contents which exists in the bowel beyond. He will then naturally wonder by what means the removal of the sac containing the dammed-up contents of the cæcum and ascending colon can be benefited by their excision. He would argue that the obstruction in the remaining portion of the bowel could in no conceivable manner be affected by his surgical procedure. He would realise that the removal of this sac would only entail the further damming back and infection of the contents of the small intestine, with disastrous results to the individual.

The same criticism applies equally to the less radical procedures of suspension as initiated by Rovsing of Copenhagen in 1906. His treatment was adopted and modified by Coffey and other distinguished surgeons. If additional proof were required of the truth of this it is afforded by the fact that if after a colectomy the patient is allowed to become constipated habitually for a long time, the residue of pelvic colon left at the operation elongates and may readily reach the great length it possessed before the operation, with all the associated disabilities. It again serves as an obstacle to the passage of material from the ileum, material is dammed back and the mechanical and toxic conditions which existed previously reappear. This can only be met by the excision of as much as possible of the elongated pelvic colon, and by ensuring that in the future this portion of the bowel shall not be overloaded and over-distended beyond its capacity. It is obvious that the small residual portion of colon left after a colectomy is not of a calibre sufficient to accommodate the products of 24 hours' digestion, and to ensure perfect drainage it must be evacuated two or three times a day.

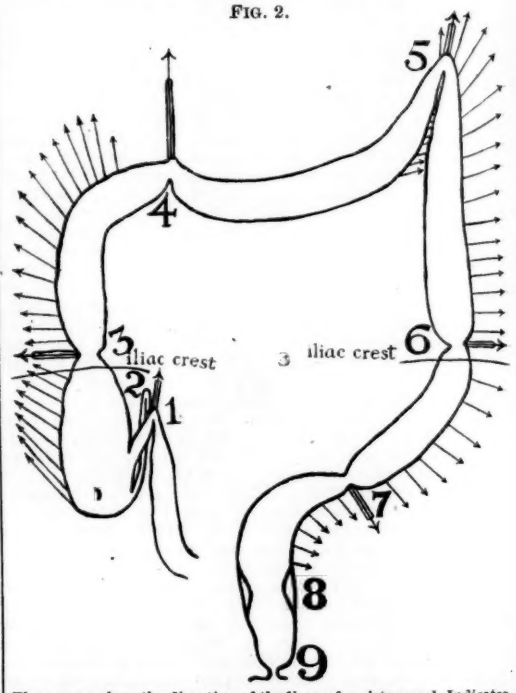
The only rational means of meeting the obstruction in the large bowel and of freeing the ileal effluent is by the removal of the large intestine to the level of the pelvic colon. Not only is the entire inflamed and elongated portion of the bowel removed together with the part which has become over-distended, but the extremity of the ileum is inserted directly into the lower limit of an elongated pelvic colon. In certain circumstances it may not be possible to remove the bowel, but the ileal effluent may be freed as effectually by dividing the ileum and putting it directly into the pelvic colon. The objection to such a procedure is the possible regurgitation of material into the large bowel, and for this reason colectomy should be performed when feasible. The regurgitation may be controlled by the evacuation of the contents of the pelvic colon two or three times a day.

Stasis in a Patient with Great Vitality.

In the other extreme the symptoms of chronic intestinal stasis which result are mainly mechanical, auto-intoxication being a less conspicuous feature of the condition.

The patient is strong, vigorous, and full of fight. The delay of material in the large bowel is met by the abundant formation of bands and membranes in certain situations which are definitely localised, where they represent the

FIG. 2.



The arrows show the direction of the lines of resistance. 1. Indicates the ileal kink. 2. The appendix passing up behind the ileum and controlling its lumen in the erect posture (it is secured by evolutionary bands to the back of the mesentery and is itself kinked and its distal portion obstructed by the anchoring adhesions). 3. The strong band which obstructs the lumen of this portion of the colon. 4. The band which extends down from the liver, gall-bladder, pylorus, and duodenum. 5. The splenic flexure whose angularity is accentuated and whose lumen is correspondingly diminished. 6. The deformity of the descending colon by a band similar to 3. 7. The last kink. 8. The circular band of muscle fibre described by W. J. Mayo. 9. The internal sphincter.

crystallisation of lines of force. I have explained the mode of formation of these bands so clearly on many occasions that if their causation has not been grasped I feel that any repetition on my part will serve no useful purpose.

The first to appear is the thickening on the under surface of the mesentery at the junction of the iliac and pelvic segments of the colon. This membrane develops and at a later period diminishes the lumen of the bowel at this point progressively, and consequently obstructs the passage of the fæcal matter through it. This particular band I call the "*first and last kink*," the first as it is the earliest to appear and the last because it is the lowest of the several kinks in the drainage scheme. Secondary to the obstruction exerted by this kink bands develop in the peritoneum on the outer aspect of the descending colon. The direction of the controlling bands varies at different points of the bowel. Those supporting the splenic flexure are nearly vertical. They angulate it and

reduce its calibre. Those attaching the descending colon immediately above the iliac crest are transverse, and often so strong as to deform and constrict this portion of the bowel in a very marked manner. Except for the acquired band which extends from the gall-bladder to the pylorus, duodenum, and transverse colon a little to the left of the hepatic flexure, the transverse colon receives no definite additional support from any acquired membrane. This band which extends from the gall-bladder tends to diminish the lumen of the large bowel at its point of attachment to it, and later to produce a considerable amount of obstruction. Similar acquired membranes develop on the outer side of the peritoneal reflexion from the cæcum and ascending colon. Those about the hepatic flexure are almost vertical. They exert but little control on the flexure, and do not materially affect its angulation. Their direction gradually changes so that just above the iliac crest they are arranged transversely, and in this situation may form a very strong band which can materially drag on and obstruct the lumen of this portion of the bowel.

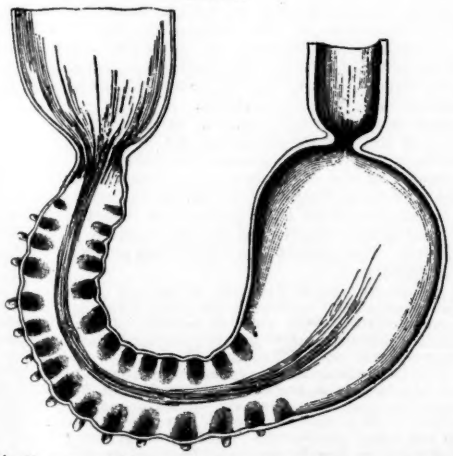
Below the level of the crest the acquired bands rapidly become more vertical, forming a membrane of varying strength surrounding and securing the cæcum. Like all the other acquired membranes, its function is to afford a resistance to the downward displacement of the viscus to which it is attached. A controlling appendix or a well-marked ileal kink is frequently present. If the duodeno-jejunal junction is acute the duodenum, and especially its first part, is moderately dilated, its muscular wall hypertrophied, and its mucous membrane perhaps ulcerated. The pylorus is hard and contracted, while the stomach is usually somewhat dilated and its muscular coat hypertrophied. An ulcer may be present at the pylorus or in the lesser curvature, the situation varying with the stage of the disease. In this type the mucous membrane of the large bowel is not inflamed, so that material tends to accumulate behind the several acquired points of obstruction in an amount varying with the extent of the diminution of the lumen of the intestine.

Between these extremes of chronic intestinal stasis innumerable intermediate stages and combinations exist, the conditions present varying with the degree of vigour or fighting power of the individual and with the state of auto-intoxication.

Diverticulitis.

The type may be modified by the abundant deposit of fat in the tissues. As the result of this distension

FIG. 3.



This diagram, which appeared in illustration of a letter to THE LANCET by the author (1920, i., 221), represents a loop of large intestine laid open. It lay in a hernial sac. Its mesentery was loaded with fat. Note that the portion of the bowel immediately proximal to the point where it is obstructed is uniformly dilated, while the rest shows the presence of a double row of sacculi occupying the position of the appendices epiploicæ. They are separated by a prominent ridge formed by a hypertrophied band of longitudinal muscle fibres.

changes may be observed in the large bowel proximal to any point of obstruction, not in the immediate vicinity of the obstruction where the bowel is uniformly dilated, but at an interval. The changes consist in the formation of hernial protrusions of mucous membrane through the muscular coat of the bowel. Later fæcal concretions may form in these diverticula. Infective processes may result and subsequently cancerous foci may form in the bowel damaged by traumatism. This condition is called diverticulitis, and it is identical in its causation with the sacculi which form in the bladder wall. I described it and its causation in a paper in the Guy's Hospital Reports, 1885, under the title of "Pathology of Extravasation of Urine." A brief abstract of the portion relating to diverticulitis was published in THE LANCET, Vol. I., 1920, p. 220, with an illustration showing the mechanical condition. (See Fig. 3.)

Radiological Evidence.

Here I would like to call attention to the excellence of the radiological work extending over a period of many years, which Dr. A. C. Jordan has done in the patient study of the condition of the intestine in chronic intestinal stasis. He has thrown a flood of light upon the mechanism of the gastro-intestinal tract and has made many original observations on the subject. He has demonstrated, by means of the bismuth meal with radiography, all the changes which I have described in the clearest manner possible, so that they are obvious to the most superficial observer. I attribute his remarkable success to the fact that he made a point of being present at the operations on a very large number of cases. In this way he was able to elaborate his methods and to clear up many difficult points in the radiology of stasis which could not have been effected in any other manner. I am greatly in his debt for his invaluable help in confirming my views on the causation of the changes in stasis.

Different Frequency of Cancer in the Two Extreme Types.

A matter of great importance is that those cases included in the first group of stasis do not get cancer of the large bowel any more than they get carcinoma of the stomach and œsophagus, while those in the second group are very liable to the formation of cancer at any of the points of obstruction produced by the acquired bands or in the situation of the muscle at the junction of the pelvic colon and rectum, to which Dr. W. J. Mayo called attention, and about the sphincter ani. Another point is that the consistence of the contents of the large intestine varies greatly throughout its length, while in the cæcum and ascending colon it is of a fluid or pasty consistence, in the descending iliac and pelvic portions of the colon it is usually firm and may be very hard. Therefore the physical character of the fæcal matter is a matter of importance in the consideration of its effects upon and its capacity to pass through any portion of the bowel whose lumen is constricted to a material extent. The explanation of the different frequency of cancer in the two extreme types is obvious. To exert traumatism at the seat of constriction it is necessary that there should be sufficient thrust produced by the muscular wall of the bowel, and again the mechanical effect of that thrust varies directly with the bulk and consistence of the portion of the intestinal contents which is forced against the partly obstructed segment of bowel, and with the degree of the obstruction.

In the first group the very elongated bowel with its feeble muscular wall, with its inflamed mucous membrane and its very scanty contents exerts but a slight effect upon the mucous membrane at the junction of elongated loops of colon, the kinking or obstruction by membranes being non-existent in these cases. Instead of developing excessive power by the hypertrophy of the muscle coat of the bowel the proximal colon gives up the struggle readily, dilates and prolapses. In the second group the bowel is not elongated, its wall is hypertrophied, the fæcal contents are abundant and bulky, and the obstruction is acute and well defined. In the first group the enfeeblement of the muscle coat of the bowel resulting from the extreme degree of intestinal auto-intoxication eliminates the mechanical factor which in the case of the large bowel is responsible for the formation of cancer, but by causing degenerative changes in the breasts, uterus, ovaries, and other organs, it renders them much more liable to cancer than the second group.

It is of interest to note that this association of cancer with the cystic degeneration which results in the breasts

from chronic intestinal stasis is now being gradually accepted by the profession. It is many years since I called attention to it in the clearest manner possible. The same applies equally to the ovary, pancreas, liver, and other organs. Therefore it is obvious that the mechanical factor in "chronic" intestinal stasis plays a vastly more important part in determining the presence of cancer in the large bowel, as it does in the stomach, than does the toxic factor.

Possibility of Elimination of Mechanical Causal Factors.

Again the question arises, Can we eliminate the mechanical factors which determine the development of cancer in the large bowel? These factors are: (*a*) the constriction of the lumen of the bowel at several points by the formation of acquired bands or by the spasmodic contraction of a hypertrophied sphincter muscle; (*b*) the thrust of the hypertrophied muscle coat of the bowel proximal to the obstruction; (*c*) the increasing desiccation of the contents of the large bowel.

Dr. Hoffman has shown in his elaborate work[2] on the causes of death that cancer is increasing with great rapidity in civilised communities. He points out that while it apparently does not exist in savage life, it occurs just as frequently in the civilised savage as it does in the white man. The same would appear to apply to many of the lower animals in the wild state and in captivity.

Dependence of cancer upon stasis.—Stasis can be avoided by attention to the diet of the individual from birth, paraffin being used before meals so as to meet the unavoidable disadvantages of the mechanical relationship of the individual to his surroundings that civilisation entails. By mechanical relationship to surroundings I mean the very different and varied attitudes and exercises that are employed by the savage as compared with those of the civilised individual. For example, in civilisation the trunk is erect from morning to night, the recumbent posture being only assumed at night time. How different are the conditions in savage life!

That paraffin is of incalculable use in facilitating the passage of the contents of the intestine through a hampered pylorus, duodeno-jejunal junction, and terminal ileum is well recognised by the profession. By rendering the contents of the colon more fluid and by lubricating the mucous lining it obviates the formation of bands and spasmodic contraction of involuntary muscle fibres, diminishes the necessity for the thrust on its contents exerted by the muscle wall of the bowel, and influences very materially the character of the impact of the fæces which are no longer hard and desiccated upon any point of constriction in the lumen of the large bowel. In other words, if you wish to avoid cancer of the large bowel use enough paraffin to render the fæcal matter as it is expelled from the anus soft and non-irritating. Paraffin has afforded more comfort to the community and has prolonged life and avoided the development of disease more effectually than any other material of which I am aware. Further evidence of the dependence of cancer upon intestinal stasis is shown by what might be regarded as an intermediate state of civilisation from the physical standpoint, as in such countries as India and China.

Locality of the growth.—Cancer develops in the large bowel at one of the points of constriction by acquired membranes or at the rectal sphincters. The exception is in the case of diverticulitis, in which the malignant growth arises in an area of the bowel proximal to the seat of obstruction and not at the point where the constriction exists. The treatment of carcinoma of the rectum has been excluded from this discussion, so I will not refer to it beyond stating that while in my experience no single operative procedure best meets the conditions present in all cases of cancer of the rectum and pelvic colon, the operation which I find the most effectual in picked cases involves the complete removal of the disease by the excision of the rectum and pelvic colon and all infected soft parts and glands.

[2] The Mortality from Cancer throughout the World, by F. L. Hoffman, Prudential Press, 1915.

It was described in the *Clinical Journal*, 1907 and 1908, in a paper entitled "The Operative Treatment of Cancer of the Large Bowel," and in THE LANCET, 1908, vol. i., p. 418. Clinically cancer of the large bowel is not usually recognised till the symptoms which indicate a varying degree of obstruction call the attention of the surgeon to the seat of progressive diminution of the lumen produced by the growth.

As regards the locality of the tumour the common situations are in the points of the bowel where its lumen is constricted by acquired adhesions or by muscular spasm—viz.: (1) In the ascending colon at or about the level of the crest of the ilium; (2) in the transverse colon to the left of the hepatic flexure where the lumen of the bowel is constricted by the acquired band which extends down from the gall-bladder, liver, and pylorus; (3) at the splenic flexure; (4) in the descending colon at or about the level of the crest; (5) in the colon at the junction of the pelvic and iliac segments in the situation of the last kink; (6) about the rectal sphincters.

Treatment.

The treatment of cancer of the colon must differ with the locality and extent of the growth, the condition of the intestines at the time of the operation (especially as regards accumulated contents), the vitality of the individual, the invasion of adjacent viscera or abdominal wall, the presence of secondary growths, the degree of intra-abdominal tension, the age and sex of the patient, the amount of fat present in the tissues, and the circumstances in which the operation is performed.

There is one point of great practical interest in the operative treatment of cancer of the big bowel, and that is the rarity with which peritoneal adhesions form subsequent to operation. This would seem to be due to the fact that owing to the gradual diminution of the lumen of the bowel by the growth, the muscle coat of the intestine proximal to it becomes greatly hypertrophied, so that the bowel is capable of vigorous action and in a certain proportion of cases a variable amount of fluid lies free in the peritoneal cavity. I mention this as it eliminates to a very great extent the risk of adhesions which exists after all abdominal operations of any extent in which there has been no local obstruction of the lumen of the bowel and corresponding hypertrophy of its wall. This risk of the formation of inflammatory adhesions is exaggerated in the flaccid, inert, wasted intestine present in the simple or toxic variety of stasis.

Advantages of colectomy.—A careful study of the causation and the mechanics of stasis on which cancer depends would indicate clearly that the ideal operation for cancer of the large bowel is colectomy, providing that a sufficient length of pelvic colon can be secured into which the end of the ileum can be inserted directly, and that other conditions are favourable to its performance. The advantages which this procedure afford are as follows:—

(1) A perfectly secure junction of the end of the ileum to the pelvic colon can be readily effected; if this operation be performed skilfully the risk of leakage of the intestinal contents is infinitesimally small, providing that the patient has any residual power of repair.

(2) The ileal contents are evacuated at once and freely by means of a large œsophageal tube (usually No. 25) passed up through the anus for about six inches above the junction. The tube is left in position for six days, by which time firm union has taken place at the junction. I have employed this method for more than 20 years, and I can only recall one case—namely, that of a young child—in which the end of a tube produced any injury to the bowel, and that patient was in an apparently hopeless condition at the time of the operation. The contents of the ileum being fluid, and their consistence being rendered still more so by the free admixture of paraffin administered both by mouth and through the rectal tube, no such clogging occurs as too frequently takes place when a large tube is used in a similar manner for resection of a growth in the continuity of the large bowel.

(3) If, as is too frequently the case, a large quantity of material has collected in the colon behind the obstruction, it is removed in its entirety and the system is at once freed from the deleterious effect of the poisoning it produces, as well as from its mechanical results.

(4) The abdomen is left quite flaccid after the operation, all intra-abdominal tension being relieved by the removal of the

length of gut and its accumulated contents. It is difficult to exaggerate the importance of this factor of diminished intra-abdominal tension not only as regards the immediate reduction of the risk to life, but also as affecting the comfort and ease of convalescence.

(5) The prompt relief of the ileal stasis and of the consequences, which are the result of the damming back and infection of the contents of the small intestine, plays a very obvious part in the restoration of the patient to a state of health and vigour not enjoyed for many years.

(6) In the case of cancer in any situation other than about the last kink the resection of the colon removes the risk of growth taking place at a later date in this last position. This risk is not a small one. I have removed the cæcum, ascending and transverse colon for extensive carcinoma of the ascending colon, and have seen the patient ten years later with a primary inoperable growth in the situation of the last kink. In this case the ileum was put into the end of the transverse colon so that the last kink still remained operative as the obstruction responsible in the first instance for the growth in the ascending colon.

(7) Colectomy enables the operator to deal effectually with any secondary glandular infection far more thoroughly than is possible in a partial resection, since all anxiety as to the interference with the circulation of the residual bowel is removed by its excision.

(8) In a fat patient if the growth is in the ascending or transverse colon the risk may be somewhat reduced by dividing the transverse colon to the left of the middle line, excising the proximal large bowel, and putting the end of the ileum direct into the side of the pelvic colon. Against this is the time taken in closing the distal end of the colon and the possibility of regurgitation.

Unless the surgeon is perfectly familiar with the mechanics of the large bowel in chronic stasis he may experience on the first occasion he performs colectomy sufficient difficulty in the removal of the colon as to render it a very serious operation. A knowledge of the arrangement of the acquired bands affords the operator a ready means of removing the bowel quickly, easily, and with reasonable safety.

The varying conditions which cancer of the large bowel presents make its treatment of the greatest interest to the surgeon. The disgust and annoyance caused by a colostomy, together with the trouble it entails on the patient and others, render it advisable that the surgeon should not hesitate to take much risk in avoiding its performance. The dread that the public has of infection is another strong argument against rendering the existence of cancer conspicuous by a colostomy. The operative procedure necessary to avoid a colostomy may sometimes make great demands on the skill, ingenuity, and judgment of the surgeon. Very much depends in most cases on the condition of the pelvic colon and on the possibility of inserting the divided end of the small bowel into it well beyond the growth.

Extensive Scope of Colectomy.

Perhaps nothing is so surprising as the remarkable and prolonged benefit that will frequently follow an operation on an irremovable carcinoma of the bowel by the complete diversion of the fæcal stream from it. One has also to realise in performing short-circuit operations that life can be carried on in apparently perfect health with only a short length of small intestine. The surprises which extensive operative measures may afford are often extraordinary, and unless there is evidence of secondary growth in important organs there is practically no limit to the field of operation. No procedure should be considered too radical or too extensive in cases in which adjacent viscera have become involved in the growth, and the more familiar the surgeon is with intestinal surgery the more readily will he carry out operations on conditions which may at first sight appear to be hopeless and inoperable.

Only on one single occasion have I excised the large bowel in its entirety. The operation was done on a patient who appeared to have a malignant growth obstructing the iliac colon. Eleven years previously her left breast had been removed for cancer. On opening the abdomen a mass was seen obstructing the iliac colon. It was peculiar in that it did not surround the bowel, but invaded it along its mesenteric attachment. While freeing the diseased bowel I found that a similar growth extended in varying amounts along the entire mesentery of the large bowel, even into the pelvic colon. I therefore proceeded to remove the entire colon, including the anal aperture. The end of the ileum was then sewn to the margin of skin which originally surrounded the anal orifice. The late Mr. Plimmer, with whom I discussed the case, was quite familiar with the pathological condition of the bowel, which he regarded as being secondary to the breast infection. The patient lived for some time and died from secondary growths, which were not observed at the operation.

In a certain number of cases of acute obstruction in which the patient's condition is such that any extensive procedure is inadmissible, the formation of a lateral anastomosis between the large bowel proximal to the growth and that distal to it, may be effected if the proximal bowel is not too distended and its wall too fragile. This does not free the growth from a certain amount of irritation from the fæcal contents, since the contents of the bowel always tend to follow the normal course. Later it may be possible to remove the large bowel without the risk of infection and the added difficulty which a temporary fistula would afford. Again, in the same condition it may be advisable to divide the ileum and to put it directly into the pelvic colon, closing its distal end or draining it should the colon proximal to the growth be distended with fæces. Later the colon can be removed if possible.

If the growth is in the splenic flexure, unless the condition of the parts is such as to render a resection easy and safe, colectomy is the safest procedure. If the cancer is in the vicinity of the last kink and the condition of the growth and bowel is very favourable for resection this may be the safest course. But if the growth is of such a nature that to establish continuity of the divided ends of the colon would involve the patient in great risk, and especially if much material is dammed up in the colon, colectomy offers by far the best prospect of success. It is so much easier and safer in the large majority of cases to put the end of the ileum into the divided end of the pelvic colon in a colectomy than it is to join together the extremities of the large bowel after the excision of a growth. The risk of recurrence is also greatly diminished by the more extensive operation.

In women, owing to the greater area of the abdominal cavity, colectomy is performed with much more facility than in the male. The degree of intra-abdominal tension and of laxity of the abdominal wall are very important considerations in deciding on the nature of the operation. With a loose abdominal wall in a woman advanced in years colectomy affords a minimum of risk. When there is a very considerable amount of intra-abdominal tension at the end of the operation it is advisable to make no attempt to bring the edges of the muscle wall together but merely to suture the margin of the skin incision together by means of such a suitable arrangement of sutures as will prevent the escape of the intestinal contents. In this manner the area of the abdominal wall along the length of the incision may be increased for a breadth of about four inches, and it may be rendered still more extensive and the intra-abdominal tension correspondingly diminished by undercutting the skin. By reducing tension in this manner a large number of lives have been saved which would have been lost had the muscle edges been brought together. As was pointed out earlier, intra-abdominal tension is a very potent factor in producing obstruction, especially at the duodeno-jejunal junction.

EX-SERVICE TUBERCULOUS PATIENTS IN AMERICA.—Surgeon-General H. S. Cumming, of the U.S. Public Health Service, has arranged for a number of specialists in tuberculosis, not members of the Public Health Service, to visit the service hospitals, which contain 15,000 ex-Service tuberculous patients, and to study the conditions with a view to standardisation and improvement. Dr. David Lyman, of Wallingfor, Conn., Dr. Victor Cullen, of Maryland State Sanitarium, and Dr. Martin E. Sloan, of Towson, Md., will officiate in the Eastern States; Dr. George T. Palmer, of Springfield, Ohio, in the Central States; and Dr. Henry Hoagland in the South-Western States. About two weeks will be spent in each hospital.

THE CLINICAL ASPECTS OF

ENTERIC GROUP INFECTION

AS MODIFIED BY PROTECTIVE INOCULATION.

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THE disappearance during the war of typhoid and paratyphoid fevers as a constant and serious menace to the life and health of our armies in the field has been without doubt the most brilliant of the many successes achieved by the Army Medical Services. How this success has been obtained cannot be considered here, but when it is realised that in the South African War no less than 57,684 cases of enteric occurred in an army of 557,653 of British officers and men, with 8225 deaths, or a case-mortality of 14 per cent., and that during the recent war no more than 7423 cases occurred in the British armies in France, with a mortality of 3·58 per cent., it is surely a matter for genuine satisfaction.

Taking advantage of the experience, gained in former wars, that enteric was responsible for more deaths and sickness than the whole of the battle casualties, the Army Medical Services were prepared at the commencement of hostilities to deal with so formidable an adversary. The result of their labours, as we have just seen, was extraordinarily successful, but even now it will not be possible to realise how much is owed to their intelligence and foresight until the medical history of the war comes to be written. It will then be recognised that the total deaths and incapacity, caused by a disease which had hitherto such a heavy death-roll, had been reduced to an incredible figure, taking into account the enormous number of men engaged in one particular theatre of the war.

The method of protective inoculation introduced and elaborated by Sir Almroth Wright, with the result that over 97 per cent. of our men were inoculated, has entirely altered the character and has undoubtedly proved an important item in the prevention of this disease. At the same time it must be admitted that there were other very important factors at work—viz., the exceptionally capable sanitary administration, the great care taken in the feeding and comfort of the men, the elaborate arrangements for bacteriological investigation, the prompt recognition by the regimental medical officers of the cases of suspect enteric, and the wisdom of the course adopted early in the war of selecting special hospitals for the investigation and treatment of this disease; all these factors had their share in producing such an excellent result.

Definition and Diagnosis of Enteric Group Infection.

The term enteric group infection embraces a pathological condition which is the result of the invasion of the body by the *Bacillus typhosus*, *Bacillus paratyphosus A* or *B*. The clinical picture which follows, and which it is the purpose of this paper to describe, has been much modified since the protective inoculation against these diseases has been so completely carried out. Thus it is often that the symptoms are so very mild and atypical, even to those accustomed to deal with them, that their diagnosis becomes a purely bacteriological investigation, whilst, on the other hand, there are times when the symptoms are so characteristically toxic that they resemble the enteric so often seen in the uninoculated. Between these extremes lie the larger proportion of cases upon which the careful study of enteric group infection will enable one to form a very definite and decided opinion.

The position of the bacteriolgist with regard to this infection is a highly important one, for he alone can positively diagnose it, and he alone can say when the patient is free from infection. Whilst the clinician is able in a very large number of instances to diagnose the condition as one of the enteric group, it must be recognised at once that it is impossible for him upon clinical grounds to discriminate as to whether the patient is suffering from typhoid, paratyphoid A or B. Previous to the war it was extremely rare to find paratyphoid A in England, although something more seems to have been known of it in France and America. It was not, however, until the arrival of troops from India to the theatre of war on the Western front that its appearance amongst our troops in France and Flanders became marked. Paratyphoid B, on the other hand, has been recognised in England for the last ten years.

Through the kindness of Colonel A. Bertram Soltau, until recently one of the consulting physicians to the armies in France, I am able to make use of the following table showing the total cases of enter c group infection in the British armies in France:—

TABLE I.—*Total Cases of Typhoid and Paratyphoid in British Armies in France from the Commencement of Operations to Dec. 31st, 1918 (British Troops only).*

97 per cent. of Strength Inoculated.

Typhoid.	Cases.	Deaths.	Case mortality (per cent.).
Inoculated with T.V. or T.A.B.	1728	79	4·57
Uninoculated	703	129	18·35
Total	2431	208	8·55
Paratyphoid.			
Inoculated with T.A.B.	1357	17	1·25
Uninoculated	2694	35	1·29
Total	4051	52	1·28
Enteric Group.			
Inoculated with T.V. or T.A.B.	878	4	0·45
Uninoculated	63	2	3·17
Total	941	6	0·63
Grand total	7423	266	3·58

Comment on this table is almost unnecessary. The mortality amongst the uninoculated typhoids is particularly noteworthy. The paratyphoids are included under one group. The term "enteric group" is a useful method of classifying those cases where the agglutination results, whilst pointing to enteric group infection, do no suggest with sufficient definition the variety of the infection.

These notes are prepared as the result of the experience obtained whilst working in one of the largest special hospitals in the north of France, where special facilities were given for the reception, treatment, and bacteriological investigation of this variety of case. The following cases were admitted as suspect enteric fever from January, 1915, to December, 1918.

TABLE II.

Year.	Cases of suspect enteric.	Subsequently diagnosed enteric.
1915	1821	1310
1916	2016	1150
1917	1362	648
1918	387	97
	5586	3205 = 58·5 %

TABLE III.

The 3205 positive cases were made up as follows:—

1164 typhoid	36·2 per cent.
428 paratyphoid A	13·5 ,, ,,
1128 paratyphoid B	36·8 ,, ,,
431 enteric group	13·5 ,, ,,

The total number of cases of enteric which passed through this hospital was larger than the number above, which only refers to those cases which required bacteriological investigation upon admission. The mortality was 3·5 per cent., closely agreeing with the official figures in Table I.

Signs and Symbols in the Inoculated.

We now pass to the consideration of the signs and symptoms of this group disease as they occur in inoculated men. The following observations are based upon the examination and carefully recorded notes of 150 cases collected chiefly between October, 1916, and November, 1917. During this period Major H. Marrian Perry was the pathologist in charge of the laboratory of 14th Stationary Hospital. I am much indebted to him for the bacteriological data of the cases to which reference is made, and also for his valuable help so readily placed at our disposal. The technique adopted for the agglutination test was that described in the directions issued from the Department of Pathology, University of Oxford, on behalf of the Medical Research Committee.

In describing the signs and symptoms of this group disease it should be remembered that both typhoid and paratyphoid produce a true bacillæmia, and as a result no part of the body is free from invasion. The protective influence brought about by inoculation with the triple vaccine, the virulence of the particular infection, typhoid, paratyphoid A or B, and the resisting power of the individual will be the determining factors as to the severity of the attack. Expressed in general terms, it may be admitted that the more complete and recent the inoculation the less likely is infection to take place and the milder will be the disease when infection does take place. Thus is explained the varied character of the disease from a mild febrile attack of a few days' duration to the classical typhoid condition which we have been accustomed to see in the uninoculated civil population.

There are a certain train of symptoms commonly present in enteric group infection; there are others, less frequently seen, which are the result of the infecting organism attacking in particular a system or systems, where the symptoms following the local defensive efforts become the prevailing ones and in some cases dominate the entire clinical picture. Rather than being described as types or varieties of enteric they should be looked upon as complications and be described as such. For example:—(*a*) Respiratory: lobar pneumonia, broncho-pneumonia, pleurisy, pleurisy with effusion, empyema; (*b*) cerebral: insomnia, psychoses of various kinds, meningitis, cerebral lesions, local neuritis; (*c*) intestinal: enteritis with or without ulceration, hæmorrhage, peritonitis, perforation, appendicitis; (*d*) urinary: nephritis, pyelitis, epididymitis; (*e*) vascular: thrombosis, myocarditis, septicæmia from intense intoxication; (*f*) cutaneous: boils, multiple cutaneous and subcutaneous abscesses.

TABLE IV.

The following are the most common signs and symptoms in their order of frequency:—

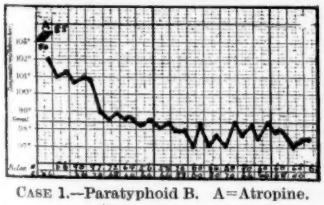
	Per cent. of cases.		Per cent. of cases.
Headache	83	Tenderness in the left hypochrondrium	38
Pyrexia (ten days or over)	77	Palpable spleen	34
Furred and tremulous tongue	49	Abdominal distension	17
Rose-red spots	45	Epistaxis	3
Slow pulse	39	Thrombosis	2

These percentages were arrived at as the result of the examination of 150 consecutive cases of enteric group infection amongst officers and nurses.

Before describing the various symptoms in detail it will be as well to describe at first a typically mild case and then one of moderately severe character.

(a) *Mild Type.*

CASE 1.—Lieut. D. H. P., aged 21. Inoculated with typhoid vaccine only (T.V. 2, 2/1915). Diagnosed para. B by agglutination.



CASE 1.—Paratyphoid B. A=Atropine.

Complained at first of slight headache and aching pains over the body; felt feverish, but remained on duty for four days, when he reported to the M.O., who sent him down to the field ambulance as a P.U.O. He was transferred to us June 19th, 1917, as a suspect enteric on the 8th day of his illness. On admission (8th day) temp. 101° F., pulse 80; complained of aching all over; no headache; tongue tremulous and covered with a thick creamy fur. No fullness or tumidity of the abdomen; no pain in the left hypochondrium. Typical rose-red spots scattered over the abdominal wall. Spleen easily palpable, but not tender; bowels constipated.

Progress uneventful. Temperature normal by 10th day; spleen palpable till 20th day. Pulse slow, 60-70. Atropine test positive on 6th day. Discharged to England on 25th day. Bacteriological data showed stools and urine negative. The serological data were as follows:—

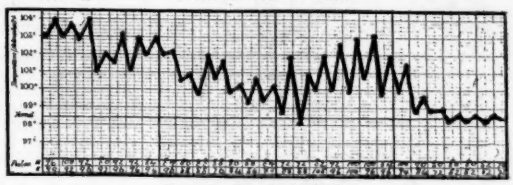
	T.	A.	B.	
8th day	295	0/5	50	Agglutinin units.
12th ,,	300	0/5	56	
16th ,,	295	0/5	50	

(b) *Moderately Severe Type.*

CASE 2.—Pte. T., R.A.M.C., fully inoculated (T.V. 2, 10/1914; T.A.B. 2, 12/1916; T.A.B. 2/1917). A nursing orderly employed in the surgical division. Admitted Sept. 16th, 1917, on the 2nd day of illness. Onset sudden; severe frontal headache and high fever; headache disappeared after first few days; tongue rapidly became coated with a thick yellow fur, but no tremor. Fever lasted till 26th day, continuously high for the first ten days, with a gradual decline towards the 15th day, when it rose to 102° F., and remained so more or less for eight days, finally becoming normal. Spots typical on the 6th day; a second crop a few days later. Abdomen never distended, but pain in the left hypochondrium for some days. Spleen tender and palpable till the 21st day. Heart normal. Lungs: distinct pleuritic friction at right base; some moist sounds at the left base. Bacteriological data showed paratyphoid A isolated from the blood on the 3rd day. Stools and urine negative.

The serological data were as follows:—

	T.	A.	B.	
4th day	88	250	78	Agglutinin units.
9th ,,	295	295	120	
13th ,,	440	300	130	



CASE 2.—Paratyphoid A.

General Description.

Incubation period.—Difficult to calculate, but is generally supposed clinically to be from 10–14 days.

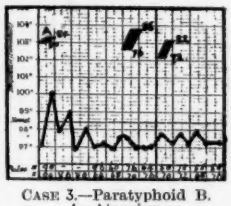
Onset.—A sudden onset is more frequent than in the uninoculated, though a gradual onset is still as frequent, or even more frequent. The most common symptoms in an acute onset are: severe frontal headache which at times may be intense, pain and tenderness behind the eyes, intolerance of light, pain and tenderness in the muscles of the back of the neck, a rigor, high fever, abdominal pain, and occasionally diarrhœa and vomiting. With a gradual onset are noted: general slackness and a disinclination to work, slight headache with loss of appetite and pains in the limbs, a sense of chilliness, and a gradually increasing pyrexia.

Headache.—This is almost a constant symptom, always an early one, and is often associated after a few days with slowness of cerebration. It usually increases in severity until the end of the first week; occasionally it is seen as a constant symptom lasting on and off for a month or five weeks. It is usually frontal, at times occipital and severe, more frequently of a dull heavy character. It is often accompanied with pain behind the eyes and pain and tenderness in the muscles at the back of the neck. Pain is invariably exaggerated during a rise of temperature, which is especially marked in cases of the trench fever type.

Temperature.—In the consecutive series of 150 cases it was found that in 30 per cent. the temperature was normal by the 10th day; in 50 per cent. normal between the 10th and 30th, and in 18 per cent. not normal until after the 30th day. The type of pyrexia naturally varies. The following is a rough classification: (1) A short type where the temperature reaches normal on or before the 9th or 10th day; (2) the classical typhoid type; (3) the prolonged continued fever type; (4) the trench fever or recrudescent type.

(1) The short type, including the milder forms of infection.

CASE 3.—In the following case there was no fever after the 5th day. The patient was an officer who had been on leave in England from Jan. 16th–26th, 1917. On the night of Jan. 24th he complained of headache and felt feverish, on the 25th he had diarrhœa, and on his return from leave the next day he was admitted at once into hospital with a temperature of 100° F. He was transferred to us on the 28th, the 5th day of his illness. He was admitted as a suspect enteric, complaining of slight frontal headache and general malaise; the temperature was normal, pulse 80; over the front of the abdomen were four suspicious spots; no distension of abdomen, spleen not palpable; no tenderness in left hypochondrium. The inoculation history showed typhoid vaccine only. T.V. 2, June, 1915. He was diagnosed paratyphoid B by agglutination on the 11th day of his illness. The laboratory report was as follows:—

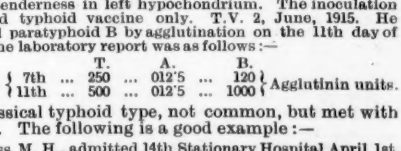


CASE 3.—Paratyphoid B. A=Atropine.

		T.	A.	B.	
Day of disease	7th	250	012·5	120	Agglutinin units.
	11th	500	012·5	1000	

(2) The classical typhoid type, not common, but met with on occasions. The following is a good example:—

CASE 4.—Miss M. H., admitted 14th Stationary Hospital April 1st, 1917, diagnosed by agglutination on 15th day. On 20th and 21st days paratyphoid B isolated from the stools and urine. Temperature reached normal on 25th day and remained so; a few doubtful spots, no abdominal distension, no diarrhœa; spleen never palpable, no pain in left hypochondrium; tongue coated and tremulous until 20th day; a slight cough and some moist sounds at both bases. Inoculation history: T.V., August, 1915.



CASE 4.—Paratyphoid B.

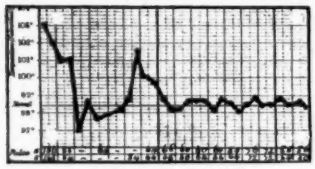
The laboratory report was as follows:—

		T.	A.	B.	
Day of disease	15th	250	0·5	20,000	Agglutinin units.
	19th	250	0·5	12,500	

(3) The prolonged continued fever type. This is almost constantly the result of some complication—e.g., bronchopneumonia, pleurisy with serious purulent effusion, tubercle, multiple abscesses, appendicitis.

(4) The trench fever or recrudescent type. In examining a large number of the temperature charts it was by no means uncommon to come across a variety of pyrexia similar to that seen in trench fever. It is quite possible that in some of these cases, especially where this type of fever appears late in the illness, for the disease to have been one of double infection, enteric and trench fever. There is, however, a very important distinction to be noted in the two diseases; in enteric a very slight alteration in the pulse-rate occurs during the periodic febrile excursions, whilst in trench fever disease the pulse-rate and temperature are much more in relation to one another, a rise in temperatnre being associated with a corresponding rise in the pulse-rate. The following are examples of this type:—

(*a*) CASE 5.—Lieut. W., aged 23. T.V. 2, 1/1915; T.A.B. 1., 1/1916; admitted June 9th, 1917, on 4th day of illness into a C.C.S. complaining of pain in back and legs, with severe headache; temp. 103° F., pulse 108. The following day temperature fell to 101° and pulse to 80. On 6th day both temperature and pulse normal. Beyond slight headache he appeared to be quite fit until evening of 9th day, when temperature was 101·5° and pulse 84. An atropine test done the day before was positive. He was admitted to us on the 10th day with a falling temperature, which reached normal the following day. No spots, no enlargement or tenderness of the spleen, no abdominal pain or distension. The only symptoms complained of were slight headache, which disappeared on 12th day, and some pain and tenderness in shins. Paratyphoid B isolated on 15th day from stools; on 16th day the agglutination report also exhibited paratyphoid B.



CASE 5.—Paratyphoid B.

This case is interesting and important on account of the exceptionally mild symptoms presenting practically none of the signs of enteric, and the impossibility of diagnosing it from trench fever without the aid of the bacteriologist.

(*b*) In the following the temperature was typical of trench fever, whilst the symptoms were clinically those of enteric.

CASE 6.—Lieut. S., aged 23. Inoculated T.V. 2 only. Diagnosed paratyphoid B by agglutination on the 17th day. Admitted June 1st, 1917. The onset was sudden. He vomited and shivered, and had a temperature of 102° F. on the first day, complaining also of pains in lower part of the back. No headache throughout his illness. Four distinct febrile periods of 48 hours each, spread over 18 days, with normal intervals. Tongue clean throughout, but there was a distinct fine tremor. A few distinct rose-red macules, spleen easily palpable, and tender for first seven days, remaining palpable till 23rd day. No abdominal distension or discomfort. Pulse slow throughout, being only slightly raised during a pyrexial period. Heart and lungs normal. Atropine test on 6th and 11th days positive. Bacteriological data showed stools and urine negative.

CASE. 6.—Paratyphoid B.

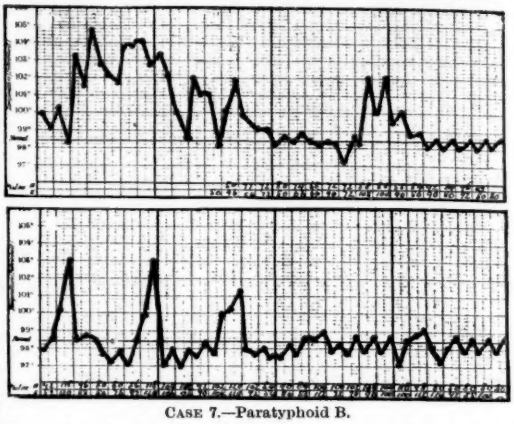
The serological data were as follows:—

	T.	A.	B.
On 9th day	140	0·5	012·5
On 13th ,,	140	0·5	30
On 17th ,,	140	0·5	35

(*c*) The following is an interesting case, because this type of fever did not show itself until the 41st day of the illness and after the temperature had been normal for a week.

CASE 7.—Gunner S. Typhoid vaccine only (T.V. 2, 12/1914). Diagnosed paratyphoid B by agglutination on the 28th day. Admitted Sept. 12th, 1917. Onset sudden, with headache, pains in shins and back. He did not reach hospital till 22nd day. On admission had a temperature of 101° F., pulse 80, resp. 24 per minute. Complained of slight frontal headache, of feeling tired and languid, and of slight pains in legs and back. Had already been running a temperature for several days. Tongue furred and dry; no tremor, no spots; spleen not palpable; some tumidity of abdomen; a few crepitations at both bases. Temperature fell to normal on 26th day and remained so for five days, during which he appeared and felt quite well. On the 31st day he shivered; temperature was 102°, pulse 103, resp. 27 per minute. On examination signs of pleurisy found at right base; four days later he was much better and temperature was normal. Signs of a small collection of fluid at this base, but by 41st day this had cleared up. On afternoon of 41st day his temperature suddenly ran up to 102·8, pulse 120, resp. 28. Complained of severe frontal headache; tongue became dirty. In 24 hours temperature had fallen to normal, remaining so until 46th day, when his second attack occurred; temperature 103, pulse 120, with headache and foul tongue, temperature falling as before in 24 hours to normal and remaining so until 50th day, when he had his third rise of fever with exactly the same symptoms.

In each of these attacks the headache appeared to be the most prominent symptom. It was always most acute and invariably frontal. The fall in temperature was generally rapid and attended by profuse sweats. It will be noted that



CASE 7.—Paratyphoid B.

the pulse-rate during these attacks is more suggestive of trench fever than enteric. It is possible, of course, that this was a case of double infection. The diagnosis of paratyphoid B was made on the 28th day and was all the more definite owing to the fact that the patient had been inoculated with typhoid vaccine only. The following was the report from the laboratory:—

		T.	A.	B.	
Day of disease	23rd	200	0	1000	Agglutinin units.
	28th	500	0	8900	

Tongue.—There is nothing very characteristic in the tongue in enteric group infection. It is generally furred and tremulous, but soon begins to clear directly the temperature approaches the normal, and when the patient begins taking a semi-solid diet, which is allowed him much earlier than formerly. Often the tongue will remain clean and moist during the greater part of the febrile state. It is generally moist and only dry, with sordes on the lips in the more severe cases.

Rash.—Characteristic spots, or some modification of them, are present in 50 per cent. of cases. They appear usually from the 7th to the 10th day, generally in crops associated with a rise in temperature, and occasionally some splenic tenderness and enlargement. In distribution they may be sparsely scattered over the abdomen, often around the umbilical area or over the back, whilst at other times they may be much more profuse and have even been mistaken for measles, being distributed over the thorax, abdomen, arms, legs, and even the face. Three varieties may be recognised: (1) a fine cutaneous roseola—somewhat similar to that seen in the influenza cases we were admitting during the last 18 months of the war—more or less confined to the lower thorax and abdomen, fading on pressure and leaving no stain; (2) the typical rose-red spots with the characteristic distribution, appearing in crops and also leaving no stain; (3) larger spots—broader, with a flattened dark-red surface and some subcuticular mottling—often profusely spread over the chest and abdomen. This variety is more often seen in cases of paratyphoid B, especially when inoculated with T.V. only.

Pulse.—The pulse is generally slow—sufficiently often to be of great diagnostic importance. It is by no means uncommon to find a pulse of 70 where the temperature reaches 105° or 104° F. It remains slow until the commencement of convalescence, when a considerable rise in its rate occurs upon the patient getting up and walking for the first time and invariably falling to its original rate upon assuming the horizontal position. This tachycardia may remain for weeks or months. Major H. F. Marris found that the application of an abdominal binder, before the patient is allowed to get out of bed, materially controlled the rate. The pulse is soft and easily compressible. The blood pressure is usually below normal, 90–110.

Tenderness in the left hypochondrium.—This is very common and varies from a slight tenderness due to an enlarged spleen to a marked and definite local tenderness the result of a perisplenitis. There is invariably some pain when an enlarged spleen is palpated. This symptom is present in about 40 per cent. cases.

Spleen.—Palpable in about 35 per cent. cases, but probably enlarged to either palpation or percussion in 60 per cent. As a general rule it is easily defined, although at times the local tenderness makes examination difficult. It seems to be fairly firm in consistence and to slip away easily from the examining hands. It remains sometimes palpable well into the 3rd week, but generally disappears with the subsidence of the fever. Occasionally it is found enlarged for a considerable time after.

Abdominal distension.—It is surprising how little information is obtained from the abdomen. Frequently it appears perfectly normal. The distension so noticeable in uninoculated cases is absent. At times it shows itself as a slight fullness only, and is then chiefly confined to the upper abdomen. Gurgling in the right iliac fossa is never a prominent symptom. The abdominal reflex is invariably dull.

Epistaxis.—Never a prominent symptom.

Thrombosis.—Occurred in 2 per cent.

Complications.

The complications are by no means so common or so severe as might be anticipated. Reference will be made to the chief only. Even amongst the uninoculated they did not occur with the same frequency or severity as those which one is accustomed to see in civil practice.

(1) *Bronchitis.*—There is usually some evidence, although often slight, of infection of the bronchial mucous membrane. Bronchitis is not often a severe complication.

(2) *Pleurisy.*—Affections of the pleura are not very common. Colonel A. E. Webb-Johnson found, upon the examination of the records of 2500 cases of enteric group infection admitted during the first two years of the war into No. 14 Stationary Hospital, two cases of empyema, 16 of dry pleurisy, and 10 of pleurisy with effusion. Of the 14 cases of which I have notes, six required aspiration, five of which were sterile, and from one the *Bacillus typhosus* was isolated by Major Perry (Major Marris's case). In eight of the 14 cases an organism of the group was isolated—paratyphoid B in four (from blood, stools, and urine), paratyphoid A in two cases (from blood and stools), and *Bacillus typhosus* in two, one from the pleural effusion and the other from the urine. In 12 of the cases the pleurisy was a right-sided one, and in one (Case 128) the tubercle bacillus was found in the sputum and paratyphoid B in the urine, the pleural effusion being sterile. The earliest date at which this complication appeared was the 3rd day, and the latest the 80th day, 20 days after a suppurating appendix had been removed. In a few instances the dullness over the back and side of the chest was so absolute as to suggest the collection of a fair amount of fluid, yet frequent aspirations were negative. In one case in particular physical signs of a moderate amount of fluid were present, a wooden dullnes, dyspnœa upon the slightest exertion, and slight cardiac displacement, yet an exploring needle on three or four occasions failed to find any fluid. This patient gradually improved, his dyspnœa disappearing, but a very marked dullness remained upon his being discharged to England, reaching from the angle of the scapula downwards, with a distinct silent area under it. This was probably a case of collapse of lung. It would be interesting to know whether this complication was solely the result of infection by the typhoid group. In one of these cases it undoubtedly was, for the *Bacillus typhosus* was isolated from the pleural effusion. It is possible, however, that in some of the cases it was due to the re-kindling of an old and quiescent tuberculous focus in the pleura. In one, at any rate, it may be assumed that the infection was a tuberculous one, in that the tubercle bacillus was found in the sputum; whilst at the same time paratyphoid B was isolated from the urine.

(3) *Broncho-pneumonia and lobar pneumonia.*—This is occasionally seen as an extremely severe complication. It may appear in the early stages of the illness or supervene at a stage when the patient has become exhausted by prolonged fever and his resisting powers much diminished.

(4) *Cerebro-spinal.*—Complications affecting the nervous system are by no means so common or so general as those described in the section on typhoid fever by Osler and Macrea in their System of Medicine. At times insomnia is noted as a very troublesome symptom, whilst at other times slowness in cerebration was observed. It is rare except in the very acute cases to have hallucinations, stupor, or maniacal delirium as the result either of the fever or of the toxæmia. In a few instances an asthenic psychosis showed itself following a prolonged or severe infection. The latter was generally of a mild type and of short duration. Hemiplegia and aphasia were occasionally seen, and always cleared up rapidly during convalescence. Local neuritis, chiefly of the lower extremities, will sometimes show itself, causing much pain and distress, and giving considerable difficulty in its treatment. This was especially so in the cases of two medical officers, one a typhoid and the other a paratyphoid.

(5) *Appendicitis.*—Signs of inflammation of the appendix are fairly common. Colonel Webb-Johnson notes it as occurring in 0·44 per cent. in his analysis of 2500 cases, and considers "the involvement of the lymphoid tissue of the appendix in typhoid lesions as by no means rare."

CASE 8.—Sapper B. (T.V. 2, 5/1915) admitted to hospital Oct. 29th, 1916, on 29th day of illness. In November, 1915, he had enteric at the Dardanelles, and in April, 1916, an attack of appendicitis. Diagnosed typhoid by agglutination nine days after admission (38th day of illness). On 61st day developed appendicitis, and an acutely inflamed appendix was removed. *Bacillus fæcalis alcaligenes* isolated from the lumen.

CASE 9.—Sapper W. (T.A.B. 2, 4/1916), admitted Oct. 31st, 1916, on 13th day of illness; diagnosed enteric group; an appendix abscess opened and drained on 35th day.

In two of Miller's 500 cases of paratyphoid an acutely inflamed appendix had to be removed. In both cases the infection was due to paratyphoid B. In a fatal case of Colonel Webb-Johnson paratyphoid B was recovered from the pus in the appendix region and also from the multiple abscesses in the liver.

(6) *Perforation of the bowel.*—This most dangerous, one might say fatal, complication, is much more difficult of diagnosis than might be expected. It is undoubtedly discovered more often on post-mortem examination. This is not surprising, since it is usually in the more severe cases that perforation occurs, where the clinical signs are often not apparent owing to the intense toxæmia. The perforations in 90 per cent. cases are multiple, and are situated in the last few feet of the ileum. Colonel Webb-Johnson notes its occurrence in 14 out of the 2500 cases; of these 6 were operated upon, with 1 recovery.

CASE 10.—P. W., admitted Dec. 12th, 1916—non-inoculated. Died a few hours after admission. P.M. showed extensive ulceration from the cæcum along the colon to the sigmoid. At the splenic flexure a perforation had occurred.

CASE 11.—Pte. C. Inoculated. History of three weeks' diarrhœa previous to admission. On admission, Jan. 21st, 1917, temperature 104·5° F., pulse 90. In a few hours patient became delirious, and at the end of three days he was completely unconscious, with high fever, rapid pulse, much abdominal distension, and tremor of lips and tongue. P.M. showed multiple typhoid ulcers in the small bowel with a perforation. There was an old tuberculous cicatrix in the mesentery.

CASE 13.—Pte. A. Inoculated. Admitted No. 14 Stationary Hospital Dec. 17th, 1918. Paratyphoid B isolated from stools. On 5th day of admission patient complained of much abdominal pain and became very restless; the following morning at 1 A.M. the pain became much more acute. He was more restless; both thighs were flexed upon the abdomen, which was hard and rigid. Considerable diffused pain and tenderness, more marked over the right iliac fossa. He vomited twice; temperature fell to 97° F., the pulse-rate ran up to 120, a large stool was passed after an enema had been given. Major P. H. Vellacott was asked to see the patient in view of perforation. The abdomen was at once opened; the lower 1½ feet of the ileum was found to be œdematous and thickened; upon it, about 8 inches from the cæcum, was a well-marked circular patch of hyperæmia where the wall of the gut was thinned. This was ring-sutured and inverted. Convalescence was uninterrupted, except for the suppuration of one of the superficial stitches.

Whilst this case cannot be looked upon as one of perforation, there is every reason to think that the operation anticipated it by a few hours. The patient's condition improved in a marked degree at once.

(7) *Hæmorrhage.*—Hæmorrhage is not so frequent is in the uninoculated, being roughly about 2·5 per cent. It is said not to be so frequent in paratyphoid A as in B. Colonel Webb-Johnson says "that hæmorrhage was followed by perforation in a sufficient number of cases (nearly a third) to emphasise the necessity for a specially careful watch being kept on the progress of patients who have suffered from intestinal hæmorrhage."

(8) *Thrombosis.*—Thrombosis of the internal saphenous vein is not very rare. It occurred in 5 per cent. of Miller's cases. In our own cases the percentage was lower, about 2. It considerably retards convalescence, and is responsible for a good deal of disability later. Major Marris, whilst working in the enteric wards at No. 14 Stationary Hospital, found the extravenous administration of sodium citrate of much benefit. He gave 300 c.cm. of a 0·5 per cent. solution of sodium citrate in saline, and repeated it if necessary. He satisfied himself that in several instances a single injection at the commencement of the earliest signs of thrombosis was sufficient to cause a diminution of the pain and swelling, and to cut short the progress of the disease.

(9) *Miscellaneous abscesses.*—Suppuration is more often the result of enteric than might be supposed. No part of the body in which abscesses may occur is exempt.

(*a*) Skin and subcutaneous tissue. Subcutaneous abscesses are due as a rule to enfeebled resistance. Rarely is the causal organism of typhoid found here, the suppuration being generally the result of infection from the skin by the *Staphylococcus albus* or *aureus*. In some cases the pus is sterile. The following is a good illustrative case:—

CASE 14.—Private B. (Case 180) was admitted May 22nd, 1917, on 8th day of illness. Paratyphoid B had already been isolated from his blood by culture. He had come a long journey by rail and arrived in an extremely collapsed condition with a barely perceptible

of pulse 150. He was much cyanosed. Body covered with typical rose-red spots; abdomen slightly distended; he complained of pain and tenderness in left hypochondrium, and was very tender over spleen; it was impossible to examine him properly. With treatment he improved very much during the first few days, but soon developed pleurisy at right base, temperature varying between 101° and 102° F., pulse always over 100. Twenty-four days after admission five abscesses had formed in the subcutaneous tissue in the back and thighs, followed in rapid succession by a series of 33 good-sized collections in various parts of the body during the following four weeks. Each abscess was opened up and allowed to drain, healing invariably occurring in a few days. Those upon the thighs were especially large; chloroform was given on several occasions. A pure culture of *Staphylococcus aureus* was obtained from the pus, and a vaccine made and given. No culture could be made from the blood. As his general health improved several subcutaneous swellings, which appeared hard and indurated, but scarcely painful, were gradually absorbed without discharging. Patient was sent to England on 154th day of illness.

(*b*) Abscesses have been found in connexion with the spleen, liver, pleura, kidneys, and epididymis. The causal organism has been isolated from a gangrenous appendix, an ischio-rectal and mastoid abscess, and also from perinephritic and sub-diaphragmatic abscesses.

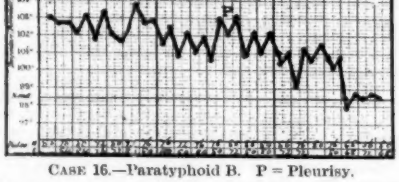
(10) *Epididymitis.*—This is not a common complication. The following case is interesting:—

CASE 15.—Captain S. (T.V. 2, 8/1914), admitted 13/4/1917, on the 11th day of illness. Paratyphoid B isolated from stools on 26th day. An attack of broncho-pneumonia at right base, starting on 13th day with abdominal distension, typical rose-red spots, and moderate pyrexia. On the 14th day pain and tenderness in right cord and epididymis, which was thickened and swollen. No orchitis; a catheter specimen of urine sterile. Four days later pain and swelling in left cord, with a tender and swollen epididymis. By the end of ten days symptoms had cleared up. No bladder irritability.

The Disease as it Occurred in the Uninoculated.

It will be of value to record a few cases selected from uninoculated patients concerning whom detailed notes are available, which cases will form a useful contrast to those protected by inoculation. Whilst protective inoculation was undoubtedly responsible to a very large extent for the almost dramatic fall in the incidence of enteric group infection in 1916–18, it was equally responsible for the mild character of the disease and for the marked diminution in the case mortality, compared with that seen during the war in the uninoculated. Reference to Table I. will make this fact quite clear. The whole character of the disease became changed, there were far fewer complications, the progress of the disease was much less prolonged, and many of the old classical symptoms of typhoid were absent. Perhaps the disappearance of the marked abdominal symptoms of distension, gurgling in the right iliac fossa, and diarrhœa with its characteristic pea-soup stools being the most noteworthy. The following uninoculated cases are selected on account of their interest:—

CASE 16.—Capt. A., aged 41. Rheumatic fever 18 years ago. Onset on April 11th, 1917, with violent headache and high fever. Admitted to hospital three days later with temperature 103° F., pulse 88, headache severe and prolonged, tongue furred but not tremulous, abdomen not distended, no diarrhœa, spleen never palpable, no pain in left hypochondrium; typical rose-red spots on abdomen and flanks

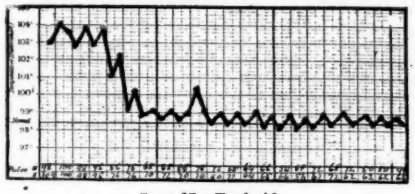


CASE 16.—Paratyphoid B. P = Pleurisy.

appeared on and off until 24th day; a slight attack of right-sided pleurisy occurred two days after admission, quickly clearing up. Temperature reached normal on the 23rd day and remained normal. Convalescence uneventful. The bacteriological report showed paratyphoid B isolated from stools on 17th day. Agglutination on 17th day. Typhoid 1 in 25; paratyphoid A 1 in 25; paratyphoid B 1 in 6000. Atropine test positive on 21st day, 77–84.

The temperature chart is typical. The absence of any abdominal symptoms and of a palpable spleen is of note. Right-sided pleurisy is more common than left in enteric.

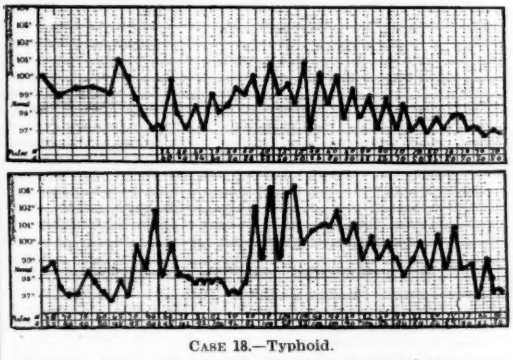
CASE 17.—Miss F., aged 21. Onset on Jan. 19th, 1917, with backache and general malaise; sent to bed on 3rd day of illness with sore throat, severe headache, and vomiting. Fever and headache continued until the 9th day, when she was admitted as a case of suspect enteric. On admission, Jan. 27th, 1917, she complained of severe frontal headache, and looked very ill; temperature 104° F. pulse 90, respirations 22. Tongue covered with a thick yellow fur on the dorsum; no pain or abdominal distension; bowels constipated, no spots, spleen not palpable; a few moist sounds at the bases of the lungs. On 11th day of illness she was very dull and apathetic, and looked a typical typhoid. On 13th day rose-red spots were scattered over the lower thorax and abdomen; tongue had become very tremulous. Temperature fell to 100° and was practically normal after. Pulse always slow, spleen never at any time palpable, nor did any abdominal symptoms arise. Further progress uneventful. She was sent to England on 35th day of illness. The bacteriological report showed blood culture negative. Stools and urine negative. Agglutination on 10th day was as follows: Typhoid, 1400; paratyphoid A, 012'5; paratyphoid B, 012'5. Atropine test on 15th day positive, 72–78.



CASE 17.—Typhoid.

This patient looked a typical typhoid all through her illness. Here again after frequent examination the spleen was never palpable, and abdominal symptoms were practically absent all through.

CASE 18.—Major L., aged 48, taken ill on Jan. 14th, 1917. Was attended in his quarters for the first two weeks with a continued fever varying from 100°–103° F., constant headache, at times of a very severe character, and obstinate constipation. On Jan. 27th, the 14th day of his illness, admitted into hospital as a suspect enteric. On admission, beyond complaining of general weakness and slight headache, he was apparently fairly well. Temperature was normal, pulse 68. Tongue was covered with a thick creamy fur, edges clean, and a slight tremor. No distension or tumidity of abdomen, no pain in left hypochondrium, and no spots. Spleen neither palpable nor tender. Abdominal reflexes were dull. Nothing abnormal detected in heart or lungs. He complained of feeling irritable and restless. On the 19th day of illness, after normal temperature of six days, he was allowed to sit out of bed. The same evening he felt shivery; temperature rose to 99'5°, pulse being about 80. Complained of severe headache with pains in his limbs; tongue coated; he became irritable and restless and had a distaste for food. From this date he ran a period of mild pyrexia until the 28th day, bu



CASE 18.—Typhoid.

never above 100'5°. His blood was examined on 15th and 22nd. On each occasion the immunity response to enteric group was so slight that the laboratory report was returned as negative to the three organisms. A blood culture taken on 15th day, when there was a slight rise in temperature, was negative. For the next ten days, with exception of a slight headache, he appeared well, and remained so until 40th day. In the meantime, frequent examinations of his stools and urine were negative until the 30th day, when a few colonies of *Bacillus typhosus* were grown from the stools. A further examination on the 32nd day produced the same result, but on the following and 37th days pure cultures of the *Bacillus typhosus* were isolated. On 40th day a pyrexial period of four days occurred, temperature reaching 102°, with a recrudescence of all his old symptoms. This again was succeeded by an apyrexial period of four days till the 48th day, when he had a further relapse lasting 14 days, for the first seven of which temperature was high and all his old symptoms of intense irritability, headache, and pains at back of neck returned, together with dirty and foul tongue. Practically no increase in pulse-rate. Never any spots. After 62nd day he rapidly began to convalesce. During final period of pyrexia and on 49th day of illness a third agglutination test showed standard agglutination for *Bacillus typhosus* in a dilution of 1 in 295. The bacteriological report showed blood culture on the 19th day negative; examination of urine negative for enteric organisms; examination of fæces: negative until the 30th day. 30th day, a few colonies of *Bacillus typhosus*; 32nd day, a few colonies of *Bacillus typhosus*; 33rd day, almost a pure culture; 37th day, a pure culture. Examination after the 44th day, negative.

Agglutination was as follows:—

	T.	A.	B.	
15th day	12'5 ...	0/5 ...	0/5	Agglutinin units.
22nd ,, ...	12'5 ...	0/5 ...	0/5	
49th ,, ...	29'5 ...	0/5 ...	0/5	

This is a case of considerable interest, illustrating very clearly the possibility of a poor immunity response in a non-inoculated subject, where the infection was apparently a mild one. Later in the course of the disease, as the symptoms become more acute, the response is greater. Here again the symptoms were vague and indefinite. The absence of spots and a palpable spleen are to be noted. Severe headache and marked mental irritability were prominent symptoms.

Diagnosis.

As will have been already gathered, an accurate diagnosis of enteric group infection can only follow as the result of the intimate working of the clinician and the bacteriologist. In probably 70 per cent. of cases the clinician experienced in this group infection will be able to diagnose it as such, but it is impossible for him to decide from the clinical picture which member of the group is the causal organism. A positive diagnosis can only be made by the isolation of the specific organism, or by the fact that the patient has acquired an immunity to one of the organisms.

Major Perry will doubtless remember the many discussions that took place between himself and some of his clinical colleagues in 1917 over cases which, whilst in every way resembling clinical enteric, nevertheless failed to satisfy him in the bacteriological findings that they belonged to this group disease. Later, however, when the symptomatology of trench fever was more fully known, we had to allow that he was justified in refusing to admit these cases as enteric. The following are various methods of diagnosis.

(1) *Cultivation of the bacillus.*—(*a*) From the blood. Blood culture can only yield a positive result if the patient comes under early observation; the organism is rarely isolated from the blood later that the 6th day of the disease; (*b*) from the urine; (*c*) from the fæces. Major Perry, writing in April, 1918, says: "In a recent series of 2010 cases not more than 20 per cent. were proved by isolation of the organism from the urine or fæces. Blood culture can no longer be counted on to yield a positive diagnosis to the same extent as in former days. Particularly is this the case in base hospitals, where the patient arrives at a period of his illness when positive blood culture could not be hoped for. Attempts at early blood culture carried out by mobile laboratories have met with as little success. The only member of the group which can still be isolated from the stools or urine to any appreciable extent is *Bacillus paratyphosus B*, but even with this organism positive stool and urine culture has very much diminished."

(2) *Agglutination.*—The generally accepted method, and the one which has without doubt been by far the most successful, is that known as the Dreyer method. The technique is fully described in the directions issued by the Department of Pathology of the University of Oxford. It is one which requires a bacteriologist well trained in agglutination methods to interpret the results. Major Perry laid especial stress upon a sufficient supply of serum. It was the custom at this hospital to obtain from 2–3 c.cm. of blood from one of the veins of the arm on three successive occasions at intervals of four days, the first specimen being taken directly upon admission.

Since the introduction of the triple inoculation vaccine agglutination has become a much more elaborate and delicate process. It appears at present to be by far the most successful method in the investigation of suspect enteric that we possess. H. L. Tidy states that "while bacilli are still present in stools, agglutinins may be entirely absent. This is especially frequent in wounded men."

(3) *Atropine test.*—H. F. Marris has published detailed results of his use of atropine in the diagnosis of enteric group infections. The rationale of his method is based upon the fact that atropine paralyses the vagus terminals, thus causing the pulse-rate to be rapidly increased, whilst in the bradycardias of typhoid origin no material increase in the pulse-rate occurs. Whilst undoubtedly a slow pulse is almost constantly seen in typhoid which is not increased upon the administration of atropine, there are yet other diseases in which there is no response—e.g., during the convalescence after pneumonia, jaundice, and some febrile conditions.

(4) *Cardio-ocular reflex (Ascher).*—Ascher in 1914 described the effect produced upon the heart-rate by pressing upon the eyeball in a number of conditions. In normal individuals firm pressure maintained upon the eyeball produces a slowing of the heart's action, the result of a reflex action on the heart through the vagus. Marris found upon applying this test in typhoid conditions that there was no change caused in the pulse-rate, but that on applying it in cases of pyrexia of unknown origin the rate was distinctly reduced. He states that broadly the absence of the normal cardio-ocular reflex coincides with the positive atropine reaction demonstrated in affections of the typhoid group and for a short time after inoculation against these diseases.

Mortality.

The case-mortality of paratyphoid was only 1·28 per cent., that of paratyphoid A being even lower. The mortality amongst all the cases of enteric group infections occurring with the B.E.F. in France was 3·58 per cent. Paratyphoid A is undoubtedly the mildest of the three infections, and typhoid the most severe.

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GASTRIC ANALYSIS IN ACNE ROSACEA.

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DURING the past year one of us (H. W. B.) has collected a number of cases of acne rosacea with a view to determining, if possible, the actual pathogenesis of the condition and the most satisfactory method of treatment. Among the cases observed were some in which the flushing and secondary pustule-formation were so severe that the unfortunate patients were ashamed to appear in public, and others in which there was only slight flushing of the face after meals, associated with excessive secretion of the sebaceous glands. The connexion between this disease and dyspepsia is generally recognised, and it is usually supposed that over-indulgence in alcohol, tea, or coffee, an important factor in some cases, produces its effect by setting up a chronic gastritis. At the same time we are not aware that any observations have hitherto been published concerning the type of dyspepsia that obtains in this condition as revealed by gastric analysis.

Rosacea and Hypochlorhydria.

It has long been noticed that the appearance of the tongue in the majority of patients suffering from rosacea is characteristic; it is broad, flabby, pale in colour, and markedly indented at the edges. Believing that such features are frequently an accompaniment of hypochlorhydria, we prescribed the acid. hydrochloric. dil. B.P. in doses of 30 minims and upwards, well diluted in water, to be taken after meals or sipped during the meal. The results obtained with this treatment have been very satisfactory and frequently almost magical, even in the very worst cases. Treatment by alkalis and bismuth before meals and by ichthyol or menthol has been far less successful. It was therefore concluded that in rosacea there may be a deficient secretion of hydrochloric acid by the stomach, and that the condition itself must in some way be dependent on that deficiency. In order to test this theory cases of varying severity were selected and their gastric contents examined by the fractional method by one of us (J. A. R.). The results of these analyses would seem to confirm the conclusion already arrived at in a striking manner, though further work is necessary before any full explanation can be formulated.

Investigation by Fractional Gastric Analysis.

Twelve cases of acne rosacea have been investigated by the fractional method of gastric analysis. This method was considered preferable to Ewald's one hour

test meal in that it detects late rises in acidity and also permits of study of the resting-secretion and of the rate of emptying. All the patients were women, and in this connexion it should be borne in mind that the tendency to hypochlorhydria, like the tendency to acne rosacea, is probably greater in females than in males. In five cases there was complete achlorhydria throughout the period of the meal; in all of these cases specimens were withdrawn at intervals of a quarter of an hour and, excepting in one case in which the last specimen was obtained at one hour, observations were continued for periods varying from one and a half to two and three-quarter hours. One patient was pregnant. Two of the cases had disobeyed the instructions and taken a small amount of food one and a quarter hours and three and a half hours respectively before the test, but both showed absence of free acid in the first and subsequent specimens. In two other cases there was an extreme degree of hypochlorhydria. Of the remaining five cases, one showed no secretion of free hydrochloric until after one hour, and two showed a temporary high peak in the curve of acidity, with an abrupt fall to the base line.

On the experience of a long series of both normal and pathological curves it might be stated that 10 of the 12 cases presented abnormal types of curve, and of these seven showed extreme hypochlorhydria. In a series of 70 healthy students T. I. Bennett, also working at Guy's Hospital, has found complete achlorhydria in one case only and definite hypochlorhydria in about 10 per cent. of the total. In a series of 90 fractional test meals in cases of dyspepsia in patients of both sexes, including the 12 selected cases of acne rosacea, but excluding cases of gastric carcinoma and pernicious anæmia, one of us (J. A. R.) has encountered in 11 instances complete achlorhydria and in 12 instances definite hypochlorhydria. Grouping together achlorhydria and pronounced hypochlorhydria, the condition was present in 58 per cent. of the cases of acne rosacea, in 20 per cent. of other dyspepsias examined, and in 10 to 12 per cent. of healthy male subjects. Taking complete achlorhydria alone as being a more clearly defined condition, it was present in 41 per cent. of the cases of rosacea, in 7 per cent. of the remaining dyspepsias, and in 1·5 per cent. of healthy males.

Other Features Revealed by the Test.

Other features revealed by the test were a tendency to rapid emptying, such as obtains in other cases of so-called achylia gastrica, and a highly mucoid resting secretion, frequently of the viscid consistency of raw egg-white. This apparent excess of mucus is probably relative only and due to the absence of other secretory products. Conversely, in hyperchlorhydria the apparent absence of mucus in the resting-juice is probably attributable to the hyper-secretion of the other glands. In one case showing a large amount of mucus there were traces of blood in five specimens. Thinking that the symptomatology, the low acid secretion, and the excess of mucus might indicate a "gastritis," films from the resting-juice were examined in a few cases, but except for the large number of squamous epithelial cells, which are seen also in normal resting-secretion, there were no striking microscopical appearances. The gastric symptoms complained of are the vague symptoms usually associated with deficient secretion and include fullness or discomfort after food, without actual pain as a rule, nausea or disinclination for food, and not infrequently "heart burn." The increased liability to acne rosacea during the menstrual period and pregnancy is of interest, in view of the fact that achylia is also reputed to be more common at these times. Whether the therapeutic administration of hydrochloric acid acts in virtue of increased digestive power, and possibly enhanced reflex motility, or as an antiseptic, or in both or other capacities, it is too soon to say, but in any case the treatment appears to have a rational basis.

Cutaneous Manifestations.

With regard to the cause of the flushing and other cutaneous manifestations it is not as yet possible to advance beyond an hypothesis. The dilatation of the blood-vessels of the face is usually considered to be a reflex, the apparent impulses arising either from the stomach, or, as has been suggested (we think erroneously), from the female pelvic organs. The fact that in well-marked cases the flushing may occur immediately after food is taken into the stomach is in favour of a reflex origin. On the other hand, it is possible that the flushing is partly or wholly due to the absorption of vaso-dilator substances, such as alcohols, formed by the fermentation of carbohydrates, by yeasts, sarcinæ or bacteria, in the stomach or small intestine, such as is liable to occur when the secretion of hydrochloric acid is deficient.

Factors Preceding the Gastric Condition.

As to the factors which may precede the gastric condition we are of the opinion that, while the consumption of alcohol and strong tea or coffee may play a definite part, and in the course of treatment should certainly be disallowed, it is of still greater importance to remember oral and tonsillar sepsis. Pyorrhœa alveolaris, chronic tonsillitis, and naso-pharyngeal catarrh are frequently present in sufferers from acne rosacea and might logically be held to predispose to gastric secretory disturbances. The series of cases discussed above is admittedly small, but as there appeared to exist a definite correlation between the clinical and therapeutic observations and the chemical findings, we felt justified in submitting a preliminary note on the subject.

We are indebted to Dr. T. I. Bennett for permission to refer to his findings in normal subjects, and to Mr. M. Maizels, who has given great assistance in conducting test meals.

ACHYLIA GASTRICA.

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THIS term was first employed by Einhorn[1] to describe the condition in which there is a complete absence of gastric secretion. An examination of the literature shows that the vast majority of cases have been put into this category without sufficient justification. Evidence has been collected in these cases to show that HCl and, usually, pepsin were absent, but the examination was almost invariably made at a single moment in the cycle of gastric digestion, and apart from these two constituents no evidence of the entire absence of secretion was obtained. The most notable of such series is that of F. Smithies, whose 7041 consecutive cases of gastric disorder were all examined by test meals withdrawn at the end of one hour. Some of such accounts do describe the stomach as empty before the test meal; but although the old idea that such was the normal condition of the resting stomach is now shown to be erroneous, I have myself found no resting-juice in the fasting stomach of fully 10 per cent. of 70 healthy students examined by the fractional test meal method; this result does not agree with that of M. E. Rehfuss, O. Bergeim, and P. Hawk,[2] who found that the resting-juice in 100 healthy normals averaged 52 c.cm. in quantity with 23 c.cm. as the lowest level.

Evidence of Gastric Secretion.

Not only is the evidence that gastric secretion is entirely absent in these cases incomplete; there is, especially in the more recent accounts, strong evidence that a secretion of some sort is present. Thus B. B. Crohn,[3] in a series of fractional test meals on subjects with achylia, shows that acid administered to such subjects is rapidly neutralised by dilution with watery gastric secretion and by mucus poured out by the gastric glands. In what proportion of these cases in which HCl has been found absent at the end of an hour can one suppose that it was absent throughout the whole of the gastric cycle? Here the answer is more satisfactory, for in a series of 60 normals I have found HCl absent at the end of one hour in two instances only, and in one of these it was not present at any subsequent moment. Amongst 90 cases with gastric symptoms

J. A. Ryle has found HCl absent at one hour in 18 cases, of whom 11 had achlorhydria throughout the whole gastric cycle and the remainder were hypochlorhydric. The many observations on achylia dependent on a single test meal withdrawn at the end of an hour may therefore be accepted as representing complete achlorhydria in the majority of cases and a marked hypochlorhydria in all.

I have elsewhere[4] pointed out that there is no justification for reserving the terms *hyper*chlorhydria and *hypo*chlorhydria for pathological conditions; is the same reticence to be observed with the word "achylia"? That it may be present without giving rise to symptoms has long been known,[5] but this is evidently a rare condition. Rehfuss, Bergeim, and Hawk[2] found achlorhydric resting-juice in few, if any, of the normals they examined. In the first 58 normal students examined by myself, free HCl appeared in the gastric contents at the following moments:—

First Appearance of Free HCl.

Time after meal.	No. of cases.	Time after meal.	No. of cases.
Before ¾ hour	41	At 1¼ hour	1
At ¾ hour	12	Never	1
,, 1 ,, ...	3		

Complete Absence of Free Hydrochloric Acid.

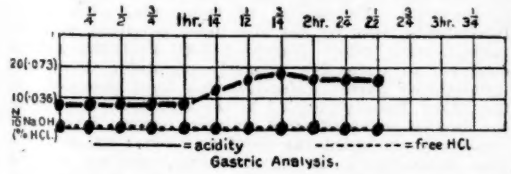
The single case in which the free acid was never present appears of sufficient interest to warrant full description.

R. S., aged 20, an average healthy medical student, is a first-class swimmer, a member of the hospital representative team. At age of 12, whilst at school, had scarlatina; no complications, but observed slight polyuria on return to work. At age of 18 was examined for army service and put into Grade I.; urine not examined. A few weeks later was in bed seven days with influenza, got up but relapsed, and had further pyrexia for 14 days. Urine was then found to contain albumin, but no examination for blood or casts was made. Was reclassed as Grade III. for military purposes.

He has remained perfectly well for a period of two years since that date; now no sign of any abnormality; urine negative, blood pressure not raised. On close questioning gives a history of several slight colds during the winter. The only gastro-intestinal history is that on two occasions during the past four years he remembers an attack of diarrhœa lasting less than 24 hours, and presumably due to some dietary indiscretion. No family history of any significance.

The fractional test meal disclosed the following condition: Resting-juice small in amount; starch almost gone at one hour, traces present until 1½ hours; bile present at 1¾ until 2¾ hours; free HCl absent throughout. Total acidity never exceeds 18 c.cm. N/10 NaOH per 100 c.cm. On repeating the investigation a similar picture was obtained; in this latter test endeavours were made to excite secretion (1) by washing out the mouth with meat extracts, and (2) by hypodermic administration of pilocarpine. No HCl appeared in response to these stimuli. (See figure.)

Condition disclosed by Fractional Test Meal.



Conditions in which Achylia has been Observed.

But if achylia gastrica be a rare phemenon in healthy persons it is certainly not so amongst those suffering from disease. T. Brown,[6] in a recent monograph on the subject, quotes the following conditions in which achylia has been observed: pernicious anæmia, chronic gastritis, gout, arthritis deformans, tuberculosis, typhoid infections, intestinal parasitic infections, chronic nephritis and myocarditis, pellagra, sprue, cancer of many different organs, diseases of the thyroid, linitis plastica, gastric atony, chronic cholecystitis, after severe psychic disturbance, and during the menstrual period. N. W. Jones[7] has studied a series of 322 cases in which pernicious anæmia and cancer were excluded, but in his series, as in that of Brown, it is by no means clear what percentage should be regarded as completely achlorhydric throughout the whole cycle of digestion. In Ryle's series of 90 cases of dyspepsia a marked hypochlorhydria was present in 23, of these 11 were completely achlorhydric. Rehfuss,[13] in a recent article, postulates two types of achylia, psychic and chemical; he, too, has found complete achylia, as shown by the fractional method, to be a relatively rare occurrence. I do not think that our present knowledge of gastric secretion justifies the classification that he has adopted, nor can a purely chemical achylia ever be demonstrated when HCl has already been secreted by a psychic mechanism. The work of Barber and Ryle on rosacea shows that here is yet another disease with which complete achylia is frequently associated and in which hypochlorhydria is characteristic.

Surveying the whole subject, one is struck by the absence of answer to the question as to whether the achylia is in any disease a recent development, or whether the pathological condition present is merely something superimposed upon an hereditary achylia. I have nowhere been able to discover reliable evidence of the development of complete achylia in a subject previously known to have secreted HCl. A further problem is the slight degree of disorder produced by the achlorhydria.

Functions of Gastric Hydrochloric Acid.

The functions of gastric HCl, as at present known, are as follows:—

1. *Hydrolytic effects.*—(*a*) The conversion of native proteins into simpler compounds, acid metaprotein, proteose, and peptone; (*b*) the conversion of the gastric zymogen into pepsin; (*c*) the formation of secretin by its action on the duodenal mucous membrane.

2. *Chemical effects on the motor mechanism.*—(*a*) The inhibition of relaxation of the cardiac sphincter; (*b*) the establishment of the normal rhythm of the pylorus.

3. *Prevention of excessive bacterial growth.*—It has, perhaps, not been sufficiently recognised that the body has compensatory mechanisms which render all these functions non-essential, however useful they may be.

1. (*a*) The hydrolytic effects of HCl can be obtained in vitro by the mere action of steam under pressure, and the enzymes of the intestines are capable of reducing proteins to amino-acids without any previous digestion in the stomach; (*b*) the activation of zymogens can in all cases be effected by bacteria, and there is evidence that ptyalin is normally so activated; (*c*) the nervous control of pancreatic secretion is by no means negligible, and it is also probable that acid is only one of several methods by which secretin is formed from the duodenal mucosa.

2. W. B. Cannon fully recognises that the chemical factor is only part of the mechanism of control of the pylorus; J. Marbaix[8] clearly showed that an increased intra-duodenal pressure would bring about closure; Cannon[9] himself and A. J. Carlson[10] have emphasised the importance of pressure in the pyloric antrum for initiating the opening of the pylorus; and the rapid emptying that is so frequently seen in cases of achylia is of itself sufficient proof that pyloric acidity is not an essential preliminary to gastric emptying.

3. The antibacterial function of HCl is less readily compensated; it must, however, be recognised that this protective mechanism is at best only partial; Macfadyen[11] long since demonstrated that many bacteria and all spores remain capable of culture after passage through the normal stomach.

Summary and Conclusion.

To summarise the position, a person without gastric hydrochloric acid is deprived of (1) a useful but merely accessory agent for protein digestion; (2) a useful but accessory agent for controlling the action of the gastric sphincters; (3) an important but not essential means of diminishing bacterial growth in the intestines. Appreciation of these facts explains the mildness and frequent absence of symptoms in such cases; it also arouses speculation as to the possible vital importance of achylia in the pathogeny of such diseases as pernicious anæmia and cirrhosis of the liver, which are probably infective in origin.

One is next confronted with the problem of treatment, and it is immediately evident that if an attempt is to be made to replace the normal acid large doses must be

given. If the volume of a meal be put as low as one pint a dose equal to 90 minims of the B.P. dilute hydrochloric acid must be added in order to raise the acidity of the gastric contents to 0·1 per cent. HCl. But a pint is a very small volume for a meal, and if there be much protein in addition a correspondingly larger quantity of HCl must be added. Crohn,[3] in his investigation of this subject, came to the conclusion (1) that single doses of HCl given before meals are useless; (2) that small doses are always useless; and (3) that only by giving large doses throughout meals can any appreciable percentage of HCl be assured in the gastric contents. Bastedo[12] expresses a similar opinion and speaks hopefully of the effects of acidol, a proprietary preparation of betaine hydrochloride, which may be taken as a solid and which liberates free HCl on solution. Pepsin should, of course, be give at the same time, and, from clinical experience, one is forced to the hopeful conclusion that even small percentages of HCl may lead to very material improvement in symptoms.

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LOSS OF SPEECH FOLLOWING AN ANÆSTHETIC.

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I CAN find no record of loss of speech following an anæsthetic in any book or periodical available to me, and in publishing the following case my hope is that further light may be thrown on it by someone who has met with a similar experience.

The patient, aged 43, ruptured the right quadriceps femoris muscle on Oct. 1st, 1920. He was a heavy, well-built man, but of rather a so-called "neurotic" temperament. An operation was performed on Oct. 13th to unite the severed ends of the muscle. The urine and heart and lungs appeared quite normal, but the patient was very nervous about the anæsthetic. A hypodermic injection of morphine gr. $\frac{1}{3}$ and atropine gr. $\frac{1}{150}$ was given half an hour before the operation.

The anæsthetic was commenced at 10.45 A.M., and the operation was completed at 1.6 P.M. Gas and ether were given, followed by chloroform and C.E. mixture, the quantities used being 2 ounces of ether and 3 ounces each of chloroform and C.E. mixture. The patient took the anæsthetic well, and never appeared to be very deeply under or abnormal in any way.

The same evening, after recovery from the anæsthetic, he could not answer any questions or speak a single word and, on being spoken to, he rolled his eyes and head in a drunken fashion. The following day he could utter a few words, but showed marked incoördination of speech and was unable to write sense, on attempting to write to his wife, though apparently knowing quite well what he wished to write. There was no personal or family history bearing on the case. There were no other signs of paralysis and he appeared to understand all that was said to him. On Oct. 15th (two days after the anæsthetic) he still spoke with difficulty, like a drunken man, and was slightly emotional, his lips quivering and his facial expression indicating a great effort to suppress weeping when spoken to as to whether his wife was coming to see him.

The neurologist reported that he appeared to be recovering from a condition of "post-anæsthetic" stupor, the reaction to interrogation being delayed but fairly good, although associated with a certain degree of mental stress, which was manifested in muscular movements of the face and in general irritability. He considered that the condition was possibly due to minute hæmorrhages or some congestion and was probably not hysterical. There was a certain degree of motor aphasia but no sensory aphasia. The lesion appeared to be cortical and to be confined to the dorsal part of the third frontal gyrus.

The ophthalmic specialist reported that both discs were normal. The urine, blood pressure, and temperature were normal throughout. Speech slowly improved, but on Oct. 19th (six days after the anæsthetic) there was still rather laboured staccato speech and the patient did not sleep well. There was still a grimacing effort at certain words, but when interested in any subject speech was now quite free and easy.

Since then the patient's condition has steadily improved, but his speech is still rather slow and deliberate, 50 days after the operation, and he states that he finds it more difficult to talk to strangers than to those he knows well.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF TROPICAL MEDICINE.

THE first meeting of this newly-formed section of the Royal Society of Medicine, which took place at 1, Wimpole-street, on Nov. 30th, under the temporary presidency of Sir LEONARD ROGERS, was very well attended and fully representative. An organising committee was appointed to prepare nominations for the offices of President, honorary secretaries, and council, and to draw up regulations for the conduct of the section. The following were unanimously elected to form the committee: Professor L. S. Dudgeon, Sir Robert Hill, Sir William Horrocks, Professor R. T. Leiper, Sir Humphry Rolleston, Dr. E. Wilkinson, with the President of the Section.

THE INCIDENCE OF FILARIASIS IN BRITISH GUIANA.

Dr. F. G. ROSE opened a discussion on this subject based on his experience of the prevalence of infection by *Filaria bancrofti* during five years' work in the colony. He dealt with his subject under three headings: (1) The incidence and economic aspects of filariasis; (2) preventive measures; (3) problems of filarial periodicity and ætiology, clinical and pathological features of the disease, and treatment by vaccine therapy.

1. *Incidence and economic aspects.*—His estimate of the incidence of filarial infection in the colony, whose total population was about 300,000, was derived from a relatively small number of inhabitants, including hospital patients, and he regarded his calculation of the percentage of persons in whom micro-filariæ were found—namely, 21·2 per cent.—as only a rough approximation of the true filarial index. Moreover, the incidence of infection necessarily varied in proportion to density of population. Examinations for the presence of microfilariæ in the blood of cases of lymphangitis and elephantiasis were not uncommonly negative owing to obstruction to the passage of embryos into the circulation or due to the death of the parent worm. The adoption of the improved method of Smith and Rivas with 10c.cm. of blood collected in 2 per cent. acetic acid, washed and recentrifuged several times, would greatly facilitate the finding of embryos and yield a more accurate and higher index than he had obtained by the ordinary method of examining 20 c.cm. of blood. It was, indeed, not unlikely that at least 40 per cent. of the population were at some time or other infected with the parasite. His results showed the age-incidence to be highest in young adult life and for the sex-incidence of filariasis 19·5 per cent. proved to be males and 23·3 per cent. females. Particulars were given of the general population, its racial proportions and distribution among the three divisions of the colony, whose area covered 90,000 square miles. Of the various towns Georgetown, the capital of Demerara, with 50,000 inhabitants, was by far the most populous in comparison with other places of 5000 to 10,000 and in contrast to extensive sparsely populated or wholly uninhabited parts. Infection was most prevalent in the more densely peopled towns and districts. From the health point of view malaria, enteric fever, and dysentery presented the chief problems; but filariasis was undoubtedly on the increase, notably outside Georgetown, where 20 to 25 per cent. of the school children showed some form of filarial manifestation. Among adults the racial incidence of elephantiasis was highest in the Portuguese and those of mixed blood, especially the females, and among children the blacks suffered most. It was still uncertain what part filarial infection played in contributing to the very high infant mortality-rate of over 200 per 1000, and the large number of stillbirths—factors which went far to explain the low increase of 50,000 in the colony's population during the past century. Dr. Rose emphasised the important influence of secondary streptococcal infection on filarial lesions in the causation of lymphangitis and lymphadenitis.

which gave rise to much disablement among labourers. Lymph stasis and the consequent lowering of general vitality of the tissues encouraged the entry of sepsis, and to this invasion much of the crippling effect of elephantiasis was due. Reference was made to the so-called "cosmetic aspects" of the filarial problem, in particular among the female population, owing to the unsightliness of the affected limbs.

2. *Preventive measures in filariasis.*—Preventive measures were in the direction mainly of an anti-mosquito campaign, and secondarily of improvement in general sanitation. *Culex fatigans* and *Stegomyia fasciata* were the chief carriers of the embryos of *F. bancrofti*. Out of a total of 1500 female mosquitoes, chiefly *Culex fatigans*, caught in Georgetown during November and December, 1918, 7·4 per cent. culices were found to contain developing larvæ, and only a single infected *Stegomyia fasciata* out of 237, although all the houses searched contained infected people. The prospects of the success of such a campaign, if rigidly and systematically carried out, he regarded as encouraging in view of the low percentage of infected mosquitoes found and the high rate of infection among the inhabitants. Every effort had been made to abolish mosquito breeding-places by the removal of waste tins and barrels likely to collect water, by clearing and repairing roof-gutters, and by screening water-supply cisterns and vats. Mosquito larvæ were frequently found in gutters between the roofs of houses and leading into the screened rain-vats. The enforcement of the bylaws dealing with these preventive measures was difficult, as they were more often honoured in the breach than in the observance. The use of the mosquito curtain as a valuable preventive of infection was appreciated among the better classes, but quite unknown among the poorer population, who lived in overcrowded and insanitary conditions.

3. *Filarial periodicity.*—To the problems of filarial periodicity Dr. Rose devoted much attention and alluded to its dependence on the country of origin, from which, in imported cases, the filaria was derived. There existed, he said, two species of micro-filariæ, morphologically identical, which adhered to their nocturnal and diurnal periodicity, and a third species, identical with and born of the same parent as the nocturnal species, which showed no periodicity. Inverted periodicity could be produced by the human host altering his mode of life. It was possible also that the habits of the mosquito host were responsible for differences in periodicity, *Culex fatigans*, the vector of *F. bancrofti* (*nocturna*), feeding at night, and *Stegomyia pseudo-scutellaris*, vector of *F. loa* (*diurna*), feeding by day. He ventured to suggest as a theoretical explanation of periodicity that there existed a harmonic relationship between the sound vibrations of the song of the female mosquito, audible to the male, and those set up by transmission in the sheath of the filarial embryo present in the blood of the human host. He described the passage of the embryos swept by the lymph stream through the thoracic duct into the venous system and right side of the heart, thence to the pulmonary capillaries, where they remained during the resting phase, till their periodic release into the peripheral circulation. In response to the vibrations or "pitch of the fundamental note" produced by culex or stegomyia, and also he thought dependent on the amount of tension exercised in the blood, the sheath of the embryo would vibrate and become stretched until the micro-filaria was detached from its resting place in the lungs, whilst the rapidity of its transit into the peripheral blood would vary with the degree of blood pressure. His theory implied that the response by the embryo of *F. nocturna* to the note of the culex was a specific one, and it was possible that there was a similar special relationship between the embryo of *F. loa* (*diurna*) and the vibrations produced by the note of *Stegomyia pseudo-scutellaris*. Change in periodicity from nocturnal to diurnal might occur in the event of *Culex fatigans* feeding, as it occasionally did when opportunity offered, by day as well as by night. As a rule, when a filarial subject migrated to an uninfected country, the original type of periodicity would be retained, but in the absence of the special mosquito and therefore of the "predominant note" which excited the response of the embryo, nocturnal periodicity would persist; but diurnal would tend to become nocturnal, owing to the influence of sleep in aiding the transmission of the resonance, which has been suggested as necessary to the release of the embryos. Dr. Rose elaborated his theory at some length and claimed that it had met with the scientific approval of an eminent physicist.

Ætiology.—Passing to the ætiology of the disease, he separated the clinical manifestations of filariasis into inflammatory and obstructive, and the merging of one into the other. The inflammatory type was either acute, subacute, or chronic, the latter associated with slight tender enlargement of glands, a sense of contraction in the affected limb and swelling, much under the influence of gravity. Superimposed infection by *Streptococcus pyogenes* was a common feature, and in acute cases the organism was usually recoverable from the glands or lymphatic vessels. Striking beneficial results had been obtained by the use of streptococcal vaccines. A full detailed account was given of the histology of filarial lesions and the pathological changes met with in the course of investigation of material collected from 50 cases of death from intercurrent disease. The influence of both uncomplicated filariasis and secondary septic infection on the Arneth count was described at length in a tabular series of his own results and those of other workers. Comparisons were drawn with the indices obtaining in certain other diseases, and in the normal state of health. The conclusion arrived at was that simple filarial infection exerted no influence on the Arneth index, but with the development of clinical symptoms—e.g., œdema and lymphangitis—in relation to severity and duration of attacks, there was an almost invariable tendency for a shift of the index to the left, more marked among male than female subjects.

Dr. Rose went on to discuss the leucocytes of the blood in filariasis, as illustrated by a number of differential counts he had made both in simple filariasis and in cases complicated by lymphangitis, orchitis, and elephantiasis, and controlled by similar counts in selected healthy residents of the colony. The elimination of conditions—e.g., malaria and ankylostomiasis, both common in British Guiana and likely to vitiate results, was of importance. The averages of his counts showed that in simple filariasis there was a rise of eosinophils in females from the normal 3 to 9 per cent., and in males a fall from the normal 6·25 to 5·5 per cent. In lymphangitis and lymphadenitis results showed varying increases of lymphocytes, and eosinophils up to 11 per cent. at the expense of polymorphs and vice versa, according to whether the inflammatory condition was subsiding or acute. Comparisons were also made with the blood picture presented by malaria as an additional complication. The hæmoglobin index and numbers of the red and white corpuscles in filariasis showed but little departure from the normal.

The paper concluded with an analysis of the clinical varieties presented by 200 cases of definite filarial disease, and with an account of experiments to test the efficacy of vaccine therapy and prophylactic inoculation in inflammatory conditions associated with infection by *Filaria bancrofti*. Details of the preparation and dosage of the vaccine employed were given. In all, 484 cases had been inoculated with streptococcal vaccine, including 317 in a later series, which received the detoxicated vaccine. Results in the first series of 167 cases, after varying intervals of one month to 12 months, showed in 46 cases there had been no further inflammatory attacks, and in 51 the attacks had been milder and less frequent and the elephantoid œdema had been ameliorated. Prophylactic inoculation could, he claimed, be regarded as having a marked beneficial effect in reducing the frequency and severity of attacks of lymphangitis in the majority of cases; where, however, there was long-standing lymphangitis and lymphadenitis vaccine treatment had little or no influence. The later series of cases was at present incomplete, but the use

of detoxicated vaccine promised results even more encouraging than those already described in the earlier series.

Discussion and Reply.

Sir PATRICK MANSON regarded Dr. Rose's theory to explain filarial periodicity on a musical basis as very interesting and ingenious, but incapable of proof. He much doubted if any acoustic tests could show distinctions between the microfilariæ of *F. bancrofti* and *F. loa*. As filarial disease was preventable, a reply to the question why it was not prevented was one of great importance.

Lieutenant-Colonel S. P. JAMES (I.M.S., retired) inquired if the Georgetown sanitary authorities had thought of any other plan of prevention than destroying the mosquito, if notification of filarial disease was in force, and if steps were taken to deal with notified cases by enforcing the use of mosquito-curtains. With reference to the measures controlling the water-supply, he also asked if the danger of infection had been dealt with outside the specially infected houses, and why it proved difficult to get cases of filariasis for the purpose of making blood examinations.

Major G. D. R. BLACK had been associated in his youth with Bancroft at the time the latter made his famous discovery of the filarial origin of the disease. He sought explanation of the fact that numbers of the thousands infected for many years with filariasis still showed no ill-effects. He recalled instances of infected persons originally examined by Bancroft who were still alive and quite well. How, he asked, did they differ from cases showing symptoms of filarial disease? He referred to experiments which had been carried out in Australia, and contended that the failure attending the solution of filarial problems was due to lack of advance in the knowledge of filariasis, which still stood at the same stage of bacteriology as in his student days.

Dr. P. H. MANSON-BAHR congratulated the reader of the paper on the valuable addition he had made to the study of the subject. He was of opinion that the periodicity of embryos followed the habits of their mosquito hosts, and described the existence in the New Hebrides of zones of differing types of filarial periodicity, a southern or non-periodic, and a northern or periodic zone. Where the non-periodic form existed, *Stegomyia pseudo-scutellaris* was the intermediary host, and a more capable transmitter of infection than *Culex fatigans*, the intermediary and feebler transmitter of the periodic type of infection.

Professor R. T. LEIPER claimed that the prominent part played by bacterial infection in filariasis had until recently been neglected as a vital cause of many of the filarial lesions. He did not regard periodicity as having anything to do with the habits of the mosquitoes, and suggested that certain chemical states of the blood favoured the selection of particular species of filariæ by the mosquito.

The PRESIDENT considered the influence of secondary infection to be of great importance in filarial disease, and emphasised the good effect resulting from the use of streptococcal vaccines.

Replying to points raised during the discussion, Dr. ROSE said that public opinion in British Guiana had not yet been sufficiently stirred on the subject of the prevention of filarial infection, and invariably took shelter behind the excuse that it was impossible to eradicate mosquitoes from the colony. The sanitary staffs were drawn from an undesirable class, open to corruption and ignorant. A further obstacle lay in the fact that the municipal council was an elected body, and the Mayor at times prevented the medical officer of health from taking steps to prosecute offenders of the bylaws, owing to the bias of personal friendship with those to be charged. Improvements for the protection of water-supplies were much needed, as rain-water from the roofs of houses and pipe water from the creek, which was polluted and had a high content of iron, was used for drinking and washing purposes. The percentage, 7·4, of mosquitoes found to contain filarial larvæ was derived from search made in better class selected houses; in the poorer houses the majority of the occupants were infected. Cases of pure uncomplicated filariasis were difficult to get hold of for purposes of blood examination, as most of those coming to the laboratory had symptoms of filarial disease and attended for treatment. The streptococcal strain usually isolated from secondarily infected cases was *Streptococcus fæcalis*, a common contamination, owing to the crude sanitary conditions prevailing, especially among the poorer classes.

EXHIBITION OF SPECIMENS.

Dr. J. GORDON THOMSON and Major J. A. SINTON, I.M.S.: *Leishmania donovani*. Preparations from a case of kala-azar were demonstrated under the microscope, showing the parasites in stained films of material recovered from the spleen pulp during life; also from the bone marrow of the cadaver and in the living state obtained by means of N.N.N. (Novo. McNeile Nicoll) culture from spleen puncture.

Major H. MARRIAN PERRY, R.A.M.C.: Tumours of the Gut Wall due to infection with the ankylostome, *Galoncus perniciosus*, showing the relation of helminth infection to bacterial invasion. The ileo-cæcal valve and cæcum preserved by Kaiserling's method showed extensive nodular thickening, hæmorrhagic discoloration, and ulceration of the bowel wall. Slide preparations exhibited: (*a*) The appearance under the low power of a small unstained nodule with its zone of altered blood, taken direct from the preserved cæcum. (*b*) A nodule of the affected gut, cut in different planes and stained by hæmatoxylin and van Gieson's method, showing admirably the histology of the worm in situ in transverse and longitudinal section, including the head with its hooked armature and the changes produced in the surrounding submucous and muscular tissues, in particular the zone of bacterial invasion caused by infection with *B. coli communis* and *Streptococcus fæcalis*, which were responsible for the terminal septicæmia. (*c*) The dissemination of the ova of the galoncus in the bowel tissues surrounding a nodule and, very strikingly, the formation of a mass of hæmatoidin crystals resulting from hæmorrhage into a nodule.

Dr. G. M. VEVERS: Developmental Stages of *Ankylostoma Ceylanicum*. Slide preparations showed the process of ecdysis (casting off of the sheath) of the young worm, with the thrusting off of the capsule or hood covering the head, to reveal the armature of hooks of the oral aperture at a later phase.

Professor LEIPER: The presence of an inner shell in the egg of *Oxyuris vermicularis* (photograph). This was very clearly demonstrated.

Dr. M. KHALIL: The occurrence of the eggs of mites in the fæces of miners in Cornwall and their subsequent development on culture-media. Specimens under the microscope were shown of the mites. *Glycyphagus* and *Aleurobius farinæ* (de Geer) and of fæces containing both the mite egg and the eggs of *Ascaris lumbricoides*.

Dr. J. B. CHRISTOPHERSON demonstrated the method of treatment of bilharziasis by means of intravenous injections of sodium antimony tartrate in two patients aged 48 and 40, who had become infected in South Africa during the war in 1900. The initial dose was ½ grain of the compound salt in 2 c.cm. of sterile saline, and subsequent doses were increased in ½ grains on alternate days up to the maximum dose of 2½ grains in 10 c.cm. of saline. The course of treatment covered a period of two weeks, during which a total of 25–30 grains of sod. antimony tartrate were administered. In the first patient, aged 48, the only symptoms were frequency and occasional pain on micturition, in addition to the presence of bilharzia ova in the urine. In the second patient, aged 40, the case was complicated by pyrexia and attacks of paroxysmal hæmoglobinuria brought on by exposure to cold and possibly related or due to toxins of the bilharzia.

Dr. Christopherson also exhibited microscopical specimens (1) from the urine, of bilharzia ova, which, as the result of a course of treatment with NaSb tartrate, had become black, granular, shrivelled, and sterile; (2) of the bladder and rectum in section, showing the presence of bilharzia ova in the submucous tissue; (3) of the liver, showing the presence of ova in the portal vein.

SECTION OF SURGERY.

CYSTS AND DUCTS IN RELATION TO CANCER AND PAPILLOMATA OF THE BREAST.

A MEETING of this section of the Royal Society of Medicine was held on Dec. 1st, Mr. W. G. SPENCER, the President, being in the chair, when Sir LENTHAL CHEATLE read a paper on this subject, which was illustrated by lantern and microscopical slides of whole sections of breasts. In May, 1914, he had drawn the attention of the section to the fact that cancer began, more commonly than was generally supposed, in ducts and in cysts which were of duct origin. He now proposed to deal with further observations which he had made, and with new material which had come into his hands. Having demonstrated by means of sections how convoluted ducts had come to be called cysts, he said that in his paper the word "cyst" was meant to apply to part of a convoluted or dilated duct. He then demonstrated from whole sections of breasts cut in series (1) that simple duct papillomata might be very few in number when present in a breast; (2) that duct cancer might likewise appear as one or more primary tumour or tumours respectively; (3) that simple papillomata might be present in so multiple a number that they grew from practically the entire epithelial surface of one or more ducts; (4) that cancer, like multiple simple papillomata might affect genetically extensive surfaces of epithelium in one or more ducts of a breast, in which case, though present, the papillomatous formation was not so marked a feature as when the duct cancer was a single tumour; (5) that therefore cancer might begin as primary foci in different parts of the same breast; (6) that there was reason to believe that this genetic process was progressive; and (7) that columnar epithelium could change its shape and become spheroidal or cuboidal in simple duct papilloma and in the tumour of a primary duct cancer, and that this change in shape invariably occurred when the cells of a duct cancer reached the lymphatic system, where they lost the papillomatous formation as well.

Sir Lenthal Cheatle demonstrated a breast from which he had schematised a duct and some of its branches full of growth, which he said was not the growth of an on-growing tumour, but was the breakdown into cancer of more or less the entire epithelial surface of the schematised duct and its branches. There were other ducts in the tumour equally full of growth—a fact which was borne out by the appearance of cysts or ducts full of growth which were cut at a different angle to the plane in which the duct was schematised. The same breast showed infiltration of the lymphatic system. There were intermediate stages of duct cancer in which the primary genetic process, although extensive in ducts, was not so extensive as in the last case nor so limited in number as in the first two cases of duct cancer he described. He showed a case in which the attention of a woman was called to her breast by a tumour near the nipple, which was pushed by it to one side. On cutting a whole section of the breast he found that the tumour near the nipple was merely a spread in the lymphatic system and could not be regarded as a primary cancer process. In looking over the rest of the section for the primary cancer process he found a duct full of growth. That led him to examine microscopically the rest of the breast, and in its lower and outer quadrant the primary cystic cancer process was discovered. The only sign that disease might be present at this part was that it felt a little more dense than the rest of the breast. Clinically it gave no sign of its presence, and therefore showed how extensive the primary duct cancer process could be without clinical signs. In order to be able to obtain obvious clinical signs the disease must spread to a very dangerous extent. Finally, he showed a nipple in which a duct was opening longitudinally on to its surface. It opened into the bottom of a little pit, and it was pointed out that if a living or a lifeless irritant were present at that part the open duct looked as if it were inviting its entrance. Sir Lenthal Cheatle further said that without making positive assertions it appeared to him to suggest that if a lifeless or living irritant gained an entrance within a duct it would account for the extraordinary localisation of primary disease to one or two ducts out of the fifteen or twenty, and therefore how necessary it must be to keep a nipple from coming into contact with every source of irritation. There was evidence to show, in some of his cases, that the infiltration into the lymphatic system occurred, not where the duct wall was thick and sclerosed, but where there was little fibrous coat in the wall, and therefore infiltration could occur much more easily through a part where there was less resistance. With regard to the spread of the genetic process, he showed ducts well away from the main focus of disease in which there was metaplasia of the epithelium lining them; there the contained cancer could not be regarded as an on-growing tumour originating from another part.

Discussion and Reply.

Mr. W. SAMPSON HANDLEY, in referring to his case which had been mentioned by Sir Lenthal Cheatle, said that the patient was a woman of about 40 years of age. The discharge from her nipple consisted of almost pure blood and came from two ducts. There was no clinical evidence of malignant disease, though microscopic section showed the presence of carcinoma. He thought that Sir Lenthal Cheatle had proved the point that most carcinoma of breast arose in ducts and not in acini.

Mr. CYRIL NITCH spoke of one of the pathological sections which was shown—that of metatases in vertebræ, the primary seat of the disease being the breast. Although the secondary growth was in bone, it was typical spheroidal-celled carcinoma of breast.

Mr. W. MCADAM ECCLES asked Sir Lenthal Cheatle whether he considered that the convolution of the tubes bore any relationship to the subsequent possible onset of carcinoma; if the convolution was associated with chronic mastitis; and if chronic mastitis was a precursor of carcinoma in the tubes. Did the speaker consider that the disease began in the periphery and gradually invaded the deeper parts of the gland, and, if so, was the suggestion not possible that carcinoma of the mammary gland was parasitic in origin and that the parasite entered by the duct of the nipple?

Sir LENTHAL CHEATLE, in reply, said that he did not think that the duct dilated on account of obstruction, but in order to accommodate its proliferating epithelium. When the breast enlarged the duct elongated, but could not shorten when the size of the breast subsided, and therefore in order to accommodate itself within the confines of the breast it had to become convoluted. He thought that the process of convolution of a duct was in some ways comparable to the convolution of varicose veins. Cancer probably began more commonly in microscopical rather than in macroscopical cysts, which therefore would be at the periphery of the duct, but not necessarily at the periphery of the breast. He considered "chronic mastitis" was a term applied to too many conditions and required more limitation. It must be borne in mind that irritation capable of producing proliferation of epithelium need not necessarily induce inflammatory changes. Such inflammatory changes, for all we knew, might indicate an irritation too great to induce epithelial changes. That seemed to him a very likely state of things, until he heard Mr. Sampson Handley say in this discussion that his case discharged blood from two ducts. Therefore it was very satisfactory to him to know he had worked out the fact from serial sections of the whole breast.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

EXHIBITION OF CLINICAL CASES.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 26th, Dr. F. S. LANGMEAD, the President, being in the chair, when cases were shown.

Case for Diagnosis.

Dr. E. A. COCKAYNE showed a case for diagnosis.

It was that of a boy aged 4¾ years, who was only 37 in. high. The complexion was sallow, and the hair was fair in colour, dry and scanty. The skin lacked firmness and there was leucodermia; the nails were a little thin. He weighed

2 st. 1 lb. He walked at 2½ years, talked at 3 years. He had only seven milk teeth, two incisors, four canines, all broad at the base and tapering to a sharp point, and one molar with sharp points on the crown. The Wassermann reaction was negative. The boy was intelligent and walked and played with other children. He had been having half a grain of thyroid three times a day and had gained a pound in two weeks, but Dr. Cockayne did not consider the case one of thyroid deficiency.

Dr. EDMUND CAUTLEY thought the case one of backward development, and not necessarily due to endocrine defect. Cases of backward development in children were frequently thought to be due to endocrine defect without sufficient reason.

Diabetes Mellitus.

Dr. GEORGE GRAHAM showed two cases of Diabetes Mellitus of an Unusual Type.

The first case was that of a girl aged 11 years. In January, 1916, she began to be thirsty and to lose weight, and pruritus vulvæ gradually developed. In May, 1916, glycosuria was detected, and she had been in a hospital or convalescent home ever since. The sugar excreted on admission was about 90 g. per day. It disappeared after two starvation days, and her sugar tolerance seemed to be about 50 g. During the next three years treatment was always complicated by her skill in obtaining carbohydrate food from the other children. Her height on admission was not known; her weight was 2 st. 3 lb. In June, 1918, her weight was 2 st. 10 lb.; in July, 1919, it was 2 st. 12 lb. (19 lb. below Galton's average), and her height was 43½ in. (6½ in. below Galton's average). In January, 1920, her weight was 2 st. 11½ lb. (22 lb. below Galton's average) and her height was 44½ in. (6 in. below Galton's average). In October, 1920, her height was 47 in. By January, 1920, she had become a well-proportioned child. The skin was of a peculiar yellow colour, varying in intensity. The pituitary fossa was 8 mm. long and 6 mm. deep. The long bones showed transverse striation at the ends. The effect of a dose of 15 g. of sugar was tested in January, 1920. The fasting value of blood sugar was 0·16 g. per cent., and at the end of one hour it was 0·29 g.; after two hours, 0·25 g.; after three hours, 0·225 g. A trace of sugar was passed in the first two hours and none in the third hour. A note in October, 1920, stated that she had been very well and very rarely passed sugar, as a starvation day followed automatically each time she stole bread. Her sugar tolerance was about 70 g. on a diet containing 68 g. of fat, 38 g. of protein, 70 g. of sugar, and 1100 calories. A day of starvation was necessary every 26 days.

The second case was that of a girl, aged 9 years, who began to be thirsty in October, 1918, and developed pruritus vulvæ. Sugar was discovered and she was admitted to hospital and treated as an in- and out-patient until September, 1919, when she was admitted to another hospital and remained in hospital for nine months. The total sugar output was about 60 g. per day. She had been treated with periods of starvation and egg and vegetable days, but was exceedingly difficult to keep sugar-free; three eggs, 300 g. of green vegetables, and 25 g. of butter—i.e., 35 g. of fat, 5 g. of protein, 12 g. of sugar, and 400 calories—being all that she could eat without passing sugar. She was small and well proportioned, with a peculiar yellow tinge of the skin, which varied from time to time. In October, 1919, her height was 38½ in. (7 in. below Galton's average) and her weight was 30 lb. (20 lb. below Galton's average). She had not grown during the last year and was the same weight. The pituitary fossa was 8½ mm. long and 7 mm. in depth. The long bones had transverse striations at the lower ends. Her sugar tolerance was about 10 g. of sugar in July, 1920. The fasting value of blood sugar was 0·13, after one hour 9·25, and after two hours 9·3. The amount of sugar excreted was very small—0·1 g. in the first hour, 0·15 g. in the second hour, and 0·2 g. in the third hour. She had now been out of hospital three months and did not appear much worse, but she usually passed sugar. She had a starvation day each week.

Mr. J. C. SPENCE commented upon the fact that when the blood sugar had reached the level of 0·225 only traces of sugar were passed.

Recurrent Facial Paralysis.—Osteogenesis Imperfecta, with Rickets.

The PRESIDENT showed a case of Recurrent Facial Paralysis.

The mother stated that the girl had had three attacks of facial paralysis, always first noticed in the morning. The first attack occurred when she was a baby, lasted a few days, and then cleared up completely. The second occurred about a year ago, and was equally transient. The present attack had lasted several weeks. There was no evidence of ear disease.

The PRESIDENT also showed a case of Osteogenesis Imperfecta, with Rickets, in a boy aged 6½ years.

Birth was easy, and no abnormalities were noted. The patient was a twin and illegitimate, and was fed for the first two years on Nestlé's milk and Neave's food. Nothing abnormal was noted by the grandmother until he failed to begin walking or moving about at the usual time. He was always languid, pale, and irritable, and failed to thrive or grow. Up to now he had never walked, and when sat up had always wanted to lie down, crying and seemingly in pain. He had had frequent "colds"; no other illness was noticed. On admission to hospital he was very pale, deformed, and undersized. The head was large, square, and bossed, and measured 19 in. in circumference, or about two-thirds of the body-length. The chest was distinctly rachitic, with ribs steeply beaded. There was much kyphosis and some scoliosis. The epiphyses were excessively enlarged and the bones were curved. There was general muscular hypotonia, with laxity of joints. This was well seen in the metacarpo-phalangeal joints, where considerable hyper-extension was possible. There were fractures in the limb bones and a greenstick fracture of the left clavicle. He cried if manipulated and was only comfortable when lying down. Blood picture: Red corpuscles, 2,827,000; hæmoglobin, 43 per cent.; colour index, 0·89; white cells, 6800. Of the latter, 43 per cent. were polymorphs, 42 per cent. small lymphocytes, 12 per cent. large lymphocytes, and 3 per cent. large mononuclears. Much polychromatophilia and slight poikilocytosis were present. Radiograms showed clear-cut fractures of long bones, surrounded by a large amount of callus in some places, at points where bending was greatest. The bones were unduly translucent as well as showing characteristic and extreme rickety changes at the epiphyseal junctions. Twelve fractures could be counted in all. The twin sister was also rickety, but to a much less extent, was not dwarfed, and had no fractures. That severe rickets was present was obvious, but the large number of fractures, their proximity in some instances, the great translucency of the bone, the fact that, apart from the clavicles, they were not greenstick in type, but clear-cut, and the absence of bending of the limb bones, except such as was produced by a solution of continuity, pointed to the presence of osteogenesis imperfecta also.

Dr. CAUTLEY held that all the features might be explained by extreme rickets and said that the large amount of callus in some places favoured that view.—Dr. H. MORLEY FLETCHER took the same view and said that he had seen clear-cut fractures in rickets. He said that the number of fractures was unusual.

Deformity of the Skull—Oxycephaly.

Dr. R. C. JEWESBURY and Mr. SPENCE showed a case of Deformity of the Skull with Bone Changes and Corneal Opacities in a boy aged 5 years.

The parents were healthy, and the one other child, aged 1 year, was normal. A paternal uncle had deformities of the hands, but this was the only instance of other deformity in the family, going back for three generations. The patient weighed 12 lb. at birth, labour was difficult and prolonged, and delivery was by forceps. There was no evidence of birth injury. The deformities of the fingers and the corneal opacities were present from birth. The boy was backward in every way; he walked at 2 years and began to speak at 4 years. He was affectionate but subject to fits of temper. His appearance was curious; the cranial vault was abnormally high (acrocephaly); the face was unusually broad, and there was a slight degree of proptosis. There was symmetrical deformity of the fingers of both hands; the terminal phalanges were flexed and the fingers could not be straightened. There was some limitation of movement at the elbow-joints. His intelligence was poor but he was not mentally deficient. The speech was indistinct and "babyish" in type. He was fond of music and could sing in tune. His habits were clean. Nothing abnormal was found in the central nervous system. The Wassermann reaction was negative. X ray examination showed the abnormal shape of the head with some alteration in size and shape of the pituitary fossa, and alteration in shape and structure of metacarpals and phalanges.

Dr. JEWESBURY and Mr. SPENCE also showed a case of Oxycephaly in an Infant. The case was a typical and pronounced example at a very early age.

Dr. MORLEY FLETCHER agreed that there were some points in the first case which were common to it and to oxycephaly. The head was certainly pointed, but the usual protrusion of eyes was absent. Oxycephaly was one of the few well-marked deformities of the skull which were not usually associated with mental defect. The second case was certainly a well-marked example of oxycephaly in an infant. It was unusual to see one so young, and he would be interested to hear if there were any changes in the fundus, since the condition often caused optic atrophy from pressure or kinking of

the optic nerve. Craniotomy had been performed lately with encouraging results, and he thought that as soon as ossification took place craniotomy should be considered in this case.—Dr. H. C. CAMERON said that he had shown two cases which were comparable to this one. Both the children had died, and probably this one would do so also, those which survived being less severe. One of his cases had polysyndactyly, the big toes and thumbs being two digits fused into one. Polysyndactyly was the deformity usually associated with oxycephaly, and he thought that the large thumbs and toes described in these cases were probably all due to the inclusion of a second digit, though the latter might be very rudimentary.

Lesion of the Crus Cerebri.—Œsophageal Obstruction.

Dr. JEWESBURY showed a case of Lesion of the Crus Cerebri in a girl aged 7 years.

In July, 1920, her memory appeared to be affected. A month later her left pupil became dilated, and this was followed a little later by ptosis of the left eyelid. In September, 1920, a right-sided hemiplegia gradually appeared. The condition had been gradually progressive. There was now complete third-nerve paralysis on the left side with hemiplegia on the right. The Wassermann reaction, both of the blood and cerebro-spinal fluid, was negative.

Dr. JEWESBURY also showed a case of Œsophageal Obstruction in a girl aged 4½ years. The child had never been able to swallow solid food, but there was no difficulty with fluids. A bougie could be passed 5½ in. from the teeth. X ray examination with bismuth meal showed a large shadow at the lower end of the œsophagus.

Dr. CAUTLEY considered that the condition present was stenosis of the lower part of the œsophagus. In some cases the lower part of the œsophagus was absent, but in this case it was obviously patent. He was doubtful whether anything could be done. Two methods of treatment might be adopted: (1) a small bougie might be passed by the mouth in an attempt to dilate the lower part; or (2) gastrostomy might be performed, and a bougie passed from the stomach end.—Dr. CAMERON thought that spasm could not be excluded, and remarked that nutrition was very good.—The PRESIDENT referred to a case of spasm of the œsophagus which he had shown lately. The patient had begun to vomit within 12 hours of birth. X ray examination after a bismuth meal showed a pouch in the lower end of the œsophagus, and it was impossible to pass a bougie into the stomach while the child was conscious. Under an anæsthetic, however, a bougie was passed with ease, and examination by the œsophagoscope showed the œsophagus and cardia to be normal.

Dr. E. G. DRU DRURY (Johannesburg) contributed the notes of a case of

Malformation of Face, Ear, Eye, and Hand.

The male infant, whose photographs were shown, was the third of three male children, born at full term. The parents and brothers were in all respects healthy. The mother's family yielded an uncle of the patient, of defective mentality, and a doubtful account of an aunt with "lumps on the back of the head," supposed to resemble the ear of the patient. No further indications of "bad stock" could be elicited. Medical assistance was called after the birth because the child had a double thumb on the right hand and a deformed ear. In place of an external meatus there was a shallow pit lined by skin, and from the angle of the mouth to a point just below the pit ran a white line, as straight as if ruled, which was inelastic, as shown when the child cried, and was plainly due to imperfect fusion of the mandibular and maxillary portions of the face. The outer third of the conjunctiva of the left eye was piled up in a dull white puckered tumour attached to the limbus of the cornea, like a huge pterygium, and later on prevented satisfactory closure of that eye. The extra two phalanges were removed from the thumb on the fourteenth day, and no deformity persisted. Two anterior tubercles of the auricle were ligatured at the same time and cut off, the stumps healing well. The tubercles contained cartilage. Neither the eye condition nor the external meatus was interfered with.

The child now (1 year) showed marked facial asymmetry, but was healthy, strong, and apparently of normal intelligence, but it was not possible to decide yet whether there was any hearing on the left side.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

A MEETING of this section of the Royal Society of Medicine was held on Dec. 2nd, Professor HENRY BRIGGS, the President, in the chair.

The SECRETARY announced that the following report had been received from the Pathological Committee on the specimen shown by Dr. DOUGLAS DREW[1] at a previous meeting:—

"We have examined this specimen and have come to the conclusion that it is a tumour composed of fibrous and muscular tissue, undergoing an unusual form of degeneration. It contains peculiar areas or loculi filled with swollen vacuolated cells, having small nuclei. We think these cells may be lymphocytes or shed endothelial cells. We see no reason to believe that it is a sarcoma or a tumour of adrenal origin."

Mr. CLIFFORD WHITE read a paper on Sodium Bicarbonate Tolerance in the Toxæmias of Pregnancy.

Major C. A. F. HINGSTON read a paper on

The Necessity for the Reduction of Blood Pressure in Eclampsia.

He said that at the Government Maternity Hospital, Madras, 2500 women were confined and about 30 cases of eclampsia were seen every year. He considered high blood pressure (B.P.) a most serious complication of eclampsia occurring in most of the cases. He believed in the necessity of keeping down the B.P. to 120 mm. or less, not only in all cases of eclampsia, but in all cases in labour with premonitory symptoms of eclampsia. He was also convinced that the blood pressure rises after delivery in a certain number of patients who have shown symptoms of eclampsia up to the time of or during delivery, and in other cases where no signs or symptoms have manifested themselves before and during delivery. In his opinion it was most necessary to watch all cases after delivery and to reduce the B.P. to 120 mm. whenever it rose above that after delivery. The best way to reduce B.P. if the os was less than four-fifths dilated was to bleed the patient until it fell to 120 mm.; when the os was four-fifths dilated he recommended the reduction of B.P. by immediate delivery. If the B.P. rose after delivery it should be reduced by venesection, which might have to be repeated two or three times. For three years at the Government Maternity Hospital, Madras, the largest gynæcological and maternity clinic in the British Empire outside the British Isles, this procedure had been carried out. The series of 64 cases so treated were followed by much better results than those obtained in previous years when other methods of treatment were adopted. The death-rate amongst the women was very small indeed, less than 2 per cent.; cases were seen and treated before severe lung complications set in.

Major Hingston then briefly described and discussed the results from October, 1917, to October, 1919. Accouchement forcé and Cæsarean section were, in his opinion, not necessary. Blood pressure was undoubtedly reduced by these measures, and the shock prevented its rising after delivery, but he advocated the method practised at the Government Maternity Hospital, Madras, in preference. Venesection in the majority of cases stopped or lessened the frequency of the fits, lowered the blood pressure to 120 or less if required, prevented rises in temperature and serious lung complications. Many cases became far less drowsy, and in some cases rapidly passed from a deeply comatose to a semi-conscious state, and all cases became less irritable. In addition to reduction of B.P. it was his practice to reduce temperature if it rose above 100° F.

Mr. VICTOR BONNEY asked Major Hingston what procedure he adopted after venesection in the treatment of women not in labour.

Mr. ALECK BOURNE fully agreed that the B.P. must be reduced. If the B.P. was charted hourly and the occurrence of fits marked on the chart the fits could be seen to follow a rise of tension, usually over 140 mm. He did not agree with the method used by Major Hingston. He, personally, had been disappointed with the results of venesection, whereas 1 c.cm. of veratrone reduced a blood pressure

[1] THE LANCET, Oct. 16th, p. 796.

of 200 mm. to 130 mm. in 45 minutes without danger if carefully used. The tension rose again shortly after, but a smaller dose sufficed to reduce it, and with judicious hourly attention to the chart it could be kept down. If venesection had to be repeated there was soon no more blood to be spared, and a low tension from shock and anæmia was undesirable. Expectant treatment with starvation, elimination, and veratrone often obviated the need for Cæsarean section.

Dr. M. DONALDSON said that there was probably a protective mechanism in these cases to keep the B.P. high and thus help the kidneys to eliminate toxins, and he doubted the wisdom of attempting to lower B.P. He believed in treatment by Cæsarean section.

Dr. GORDON LUKER agreed with Dr. Donaldson. The injection of saline after bleeding might sound paradoxical, but the latter washed out the poison and acted as a diuretic. The main object was to remove the poison, and the best way to achieve this was delivery or Cæsarean section and followed by saline.

Major HINGSTON, in reply, said that if the case was not in labour he left the pregnancy alone; labour usually followed in a few days. He found that as a rule one venesection sufficed, and he had never had to bleed more than twice. His objection to veratrone was that the B.P. rose again after its use. He did not object to Cæsarean section, but had found it unnecessary in cases other than those with contracted pelves.

Dr. JAMES YOUNG and Dr. D. A. MILLER then communicated some

Further Observations on the Cause of Eclampsia and the Pre-eclamptic State.

Dr. Young said that subsequent work had confirmed an explanation of the eclamptic toxæmia published by him in 1914. He believed that the poison was elaborated during the early disintegration of a piece of placenta, whose blood-supply had been cut off. The present paper was based on a study of 30 fresh cases of toxæmia and associated conditions. Infarction of the placenta was admittedly common in long-standing pregnancy albuminuria, while in many cases of acute eclampsia there was no visible degeneration in the placenta. If, however, the eclamptic seizure was less severe, and some days elapsed between convulsions and delivery, there was always massive recent necrosis in the placenta. This showed that placental disease was always present, but that some time was required for it to become visible. He showed lantern slides of placental infarction in the recent stage, consisting of red or purple blocks of solid tissue differentiated from the surrounding spongy placental substance, and pointed out that in the later stages the infarcted areas become much paler. The cause of the impaired blood-supply was easy to recognise in accidental hæmorrhage due to trauma, and also in placenta prævia, but in other cases it was often more difficult to account for. In accidental hæmorrhage, if the blood was concealed for some time within the uterus, infarction of the placenta over an area subtending the retroplacental separation was invariable. Dr. Young showed a specimen in which half of the placenta was the seat of recent purple infarction where it had been detached from the uterine wall. These cases of concealed hæmorrhage were invariably associated with toxæmia, and in five of Dr. Young's cases there was actually eclampsia also. In slight accidental hæmorrhage, or in a hæmorrhage so severe that it led to complete detachment of the placenta, there was no toxæmia. The toxæmia only occurred when time was allowed for the elaboration of toxic products in sufficient quantity from the affected part of the placenta. Dr. Young showed similar necrotic changes in the separated areas of placentæ prævie; out of a series of seven cases of the latter condition toxæmia had been present in three. From a clinical study of cases of ante-partum bleeding Dr. Young considered that in four instances the albuminuria actually developed subsequent to the hæmorrhage. This, taken in conjunction with other observations, would dispose of the theory that accidental hæmorrhage was a result of the toxæmia. Whilst he believed that placental necrosis was the source of the poison, it was not always possible to account for the involvement of the placental circulation on simple mechanical grounds. In many cases of eclampsia thrombosis of the retroplacental vessels was the factor operating. The heightened intra-abdominal pressure present in pregnancy probably predisposed to venous stasis. Dr. Young urged rest in bed as a necessary line of treatment in the slighter toxæmias. By this means, he said, an increasing involvement of the placenta would be prevented. He then discussed the sequence of the changes in eclampsia, and suggested that the major symptoms—convulsions, coma, &c.—were due not to the placental poison itself but to the flooding of the maternal vessels with the breaking-down products of the cells of the liver (and perhaps of other tissues), which were damaged some hours or days previously by the placental poison. In this way the occasional occurrence of post-partum seizures would be accounted for, and in this respect also eclampsia would simulate the delay in the manifestation of the toxæmia found typically in phosphorus and in some cases of chloroform poisoning. This sequence of change would account for the varied results obtained by immediate emptying of the uterus, for at the time of the operation the patient's condition might be due to a poisoning received some days before, the placental danger having meanwhile subsided or disappeared.

Dr. MILLER said that it must be recognised that in the investigations made by him and Dr. Young it was difficult to exclude the possibility of certain fallacies. For example, a condition of anæmia might favour the passage of albumin; but against this there was the absence of albumin in three of their cases of post-partum hæmorrhage. He said that 50 per cent. of cases show albumin during confinement, possibly due to shock, exertion, or to physiological causes. Other theories were that this albumin might be due to the intra-abdominal pressure caused by the gravid uterus, or that it might follow the inhalation of ether and chloroform. As Major Hingston had said, albuminuria was not always a feature of toxæmia. But of the series of cases described by Dr. Young 90 per cent. had albumin, often in large quantity, and five patients actually had eclampsia. Dr. Miller considered that the three most interesting points arising were (1) the frequent absence of albumin in accidental hæmorrhage; (2) the association of toxæmia with placenta prævia; and (3) the rarity of accidental hæmorrhage in primiparæ and of eclampsia in multiparæ.

Mr. GORDON LEY said that of 125 cases of placenta prævia examined by him albuminuria had occurred only in one, a primipara with an almost completely adherent placenta. Again, if the toxæmia were due to placental separation, why should it not occur in patients with carneous and hydatid moles and with threatened miscarriage? Dr. Young had said that in the less severe cases of toxæmia severe necrosis was present, but according to Mr. Ley's experience a large number of cases of long-standing albuminuria showed no infarction. It frequently happened that albuminuria preceded accidental hæmorrhage, sometimes by several days. A patient with chronic kidney disease frequently got placental separation with retro-placental hæmorrhage. Mr. Ley quoted as an example a case in which this had occurred. In these cases the fœtus always died, and the placental changes must be due to the renal condition. Dr. Young had said that where the whole placenta had separated no toxæmia was found, but this was not Mr. Ley's experience in a series of cases in which he had been associated with Mr. Eardley Holland. Mr. Ley emphasised the occurrence of accidental hæmorrhage chiefly in multiparæ and of eclampsia chiefly in primiparæ. As to the changes in the wall of the uterus Mr. Ley said he found areas of focal necrosis, and considered that those in the uterus were primary and those in the placenta secondary, and gave as examples cases of chronic kidney disease.

Dr. R. H. PARAMORE said that if acute yellow atrophy was not regarded as entirely distinct from eclampsia the placenta hypothesis of the cause of eclampsia fell to the ground. Dr. Young assumed that certain visible changes in the placenta were the cause of the toxæmias

of pregnancy. These used to be attributed to fœtal lesions until they were found associated with hydatid moles also. Was it not conceivable that the placental, the kidney, and the liver changes were all due to one common cause, the kidney and liver lesions being primary and the toxæmia secondary? The placental hypothesis appeared to Dr. Paramore unreasonable. In 1913 he had brought forward evidence that the albuminuria might have a mechanical cause. The intra-abdominal pressure was raised in pregnancy; this might affect the capillary circulation of the viscera and necrosis and symptoms might arise.

Mr. T. W. EDEN said that he adhered to the placental theory. Acute yellow atrophy differed sufficiently from eclampsia to have a different causation. He could not support Dr. Paramore's theory of intra-abdominal pressure, because other tumours of the same size had not any similar effect. But he criticised Dr. Young's theory, as he understood it, because according to the latter the symptoms did not occur at once after necrosis as they did after shock. Again, if traumatism in the vessels produced eclampsia the latter ought to occur much more frequently. Dr. Young apparently attributed the milder forms of toxæmia to the formation of infarcts, and if this were so toxæmias ought to be much more common. Dr. Young had seemed to imply that massive necrosis could not be explained by hæmorrhage; but if massive necrosis produced the poison what produced the massive necrosis?

Dr. A. C. PALMER said that cases of ectopic gestation showed no albuminuria. He had examined a very large number of placentæ, nearly all of which showed numerous areas of thrombosis. This was a normal condition.

Dr. MACKENZIE WALLIS had also noticed necrotic patches in *all* sorts of placentæ, normal and abnormal ones, and therefore could not regard these as responsible for eclampsia. All attempts to produce eclampsia by injection of extracts of placental tissues had failed. The quantity of diastase in the urine rose before the albumin appeared and persisted after the latter disappeared. The exact causation of eclampsia was still obscure, but he was convinced that the toxin was not produced by the placenta and also that the toxin acts primarily in blood-vessels. Fibrosis of the capillary tufts of the glomeruli of the kidney could be seen, and possibly the same changes in the vessels of the brain caused fits. As to the nature of the proteins present in the urine, globulin was relatively abundant, as also in all forms of toxic nephritis. The microscopic appearances in a toxic condition due to mineral poisons were indistinguishable from those of a toxæmia of pregnancy; the same changes could be seen in the kidney. A profuse albuminous exudation from damaged vessels took place, and the result resembled that when veins of the peritoneum or portal system were obstructed. All these facts pointed to a toxin circulating in the blood, and it was surprising that no changes could be found therein on analysis. This showed that toxæmia could not be due to over-eating, as had been suggested by Dr. Lapthorn Smith. Dr. Wallis said that he had started with the view that the placenta was the cause of pregnancy toxæmias, but had abandoned it; in the search for the cause the ovary, especially the corpus luteum, seemed to have been overlooked.

Dr. YOUNG then replied. In answer to Mr. Ley, he said that he had had two cases of abortion with albuminuria and two of hydatid mole. In neither case had separation preceded abortion. In a case of chronic kidney disease with recurring abortion the kidney trouble had dated from severe accidental hæmorrhage at the first labour. Such cases were very liable to toxæmia. In reply to Dr. Paramore, he said that intra-abdominal pressure might help by the strangulation of veins. To Mr. Eden he pointed out that the changes were produced like those of shock; the delay in both cases was of a few hours only, but symptoms might be delayed longer, because a seizure depended on the flooding of the system with a secondary substance, perhaps made in the liver, as in shock. Dr. Young was well aware that small infarcts were common, possibly associated with mild transient albuminuria, but to produce toxæmia massive disease was necessary. In reply to Dr. Wallis, he said that the kidney changes shown in eclampsia were of recent origin. Chronic kidney disease was not a characteristic feature in these cases.

HUNTERIAN SOCIETY.

EXHIBITION OF CASES AND SPECIMENS.

A CLINICAL meeting was held at Guy's Hospital on Nov. 24th, when cases were shown and demonstrations given.

Dr. J. A. RYLE gave an account of the fractional method of gastric analysis, and demonstrated an Einhorn's tube and his own modification thereof, pointing out the advantages over the large stomach tube. The method allows of a graphic presentation of the chemical phenomena during the whole cycle of gastric digestion, and of the action of drugs on the secretory function of the stomach.

Mr. ALAN H. TODD showed splints and appliances that had been made in the orthopædic workshops of Guy's Hospital, and gave a demonstration of the taking of plaster casts, and the stages in the manufacture of blocked leather and celluloid apparatus. He showed a new shoulder-abduction appliance with a metal arm-"trough" hinged to a forearm-trough supported by an adjustable upright, which took a bearing from the bony pelvis. He has used the splint with advantage in the treatment of fractures and dislocations about the upper end of the humerus, and in paralysis of the deltoid. Among other splints shown was an aluminium splint for the treatment of Colles's fracture in the fully-supinated position.

Dr. C. P. SYMONDS showed a boy of 9 suffering from malnutrition and occasional fits. Hutchinson's teeth and a strongly positive Wassermann reaction in conjunction with the clinical findings suggested the diagnosis of intracranial gumma in the right frontal region. The boy's father, though complaining of no symptoms, had typical Argyll Robertson pupils and absent knee- and ankle-jerks.

Mr. E. G. SLESINGER showed the case of a woman in whom he had performed colectomy three months previously after six years' pain, vomiting, and constipation. At the operation the big bowel was found to be greatly dilated, elongated, and dropped. The patient left hospital in three weeks. She is now free of symptoms, has gained weight, and has a normal action of the bowels once or twice a day.

Mr. H. W. BARBER showed a case of recurrent ulceration of the skin due to infection with a diphtheroid bacillus. A full account of this case may be found in the *British Journal of Dermatology and Syphilis*, Vol. XXXII., March, 1920, p. 71. The active lesion demonstrated to the society was on the abdomen and began around a vaccine injection puncture.

Mr. W. H. OGILVIE showed a typical case of Acholuric Jaundice in a boy of 11. The spleen was twice its normal size. He also showed a case of Mastitis Carcinomatosa, or acute cancer, occurring in a woman of 25 during lactation.

Mr. J. M. REDDING demonstrated the apparatus used for radiography after intraperitoneal injection of oxygen, and exhibited skiagrams illustrating the use of the method for showing the outlines of the solid abdominal viscera and abnormalities such as tumours and calculi.

Mr. F. COOK showed a case of Osteo-arthritis in a young man, with intermittent hydrarthrosis. The patient, aged 22, had periodic effusions into several joints, particularly the right knee, recurring at regular intervals of eight days. Onset four years ago, following an indefinite injury. No evidence whatever of syphilis, tuberculosis, intestinal infection, or any septic focus. Synovial fluid sterile. No anaphylactic response to any food or bacterial protein. X ray examination shows osteo-arthritic changes in the joints, and operation has subsequently revealed typical thickening and fringing of the synovial membrane.

Mr. KELSEY FRY gave a demonstration of his method of treating severe cases of cleft palate by the combined aid of surgery and prosthesis. He showed cases illustrating the successful application of the method.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this society held on Dec. 3rd, Dr. F. J. MCCANN, the President, in the chair, a paper was read by Dr. H. A. DES VŒUX on

BLEPSOPATHIA OR EYE-STRAIN.

Dr. Des Vœux said that the subject had been one of particular interest to him for over 20 years. It was fairly generally recognised that minor degrees of refractive error were of no significance as far as vision was concerned, but he was convinced that they frequently led to other baneful effects. The strain of constant adjustment told in the main on the nervous system. Headache was a frequent symptom, perhaps the most frequent, but absence of headache by no means negatived eye-strain. Dr. Des Vœux said that the two commonest symptoms for which this particular group of patients sought treatment were fatigue and exhaustion. They complained that they were easily tired and suffered from lack of power to concentrate. Faintness and giddiness were also not infrequent symptoms, and actual loss of consciousness might occur. These attacks closely resembled petit mal, and in Dr. Des Vœux's opinion many cases of true epilepsy might be due to the refractive error. Migraine was another symptom often associated with eye-strain. The patients were frequently of the "nervous" type and suffered from depression, pessimism, fears, and panics. A history of train-sickness in childhood could in some cases be elicited. In children a dislike for games, for cinema shows, and a tendency to "bilious attacks," could often be traced to the refractive error and cured by glasses. It was essentially a disease of town-dwellers and those whose eyes were incessantly being used. It was often a matter of great difficulty to get patients to have their eyes tested, both on account of dislike for wearing glasses and because they were convinced that their eyesight was excellent.

The paper was discussed by the President, Mr. McAdam Eccles, Mr. R. A. Greeves, Dr. J. Herbert Menzies, Dr. Willcox, and Dr. Vaughan Pendred.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this society, held on Nov. 25th, Dr. F. J. SADLER, the President, in the chair, Professor E. MELLANBY delivered an address on

EXPERIMENTAL RICKETS.

He gave a brief outline of the distribution and properties of the vitamines at present recognised—viz., antiscorbutic, water-soluble B and fat-soluble A, and offered experimental evidence that the anti-rachitic action of fats was not due to the fats per se but to something they contained of the nature of a vitamine. Cod-liver oil, butter, and suet had a greater anti-rachitic action than lard and the vegetable oils. There was also a wide difference in action among the vegetables oils, some, like peanut and cocoanut oils, having a much greater antagonistic effect to the development of rickets than olive and linseed oils. The action of the energy-bearing elements of the diet in regard to rickets was then discussed. Meat was found to have a definite anti-rachitic effect. On the other hand, bread was rickets-producing, and results of quantitative experiments were given where the amount of bread only varied; these showed that, other things being equal, the greater the amount of bread consumed the more intense was the rickets produced. The addition of carbohydrates (glucose) to standard diets was also shown to produce greater rickets. Professor Mellanby then dealt with the relative effects of diet and lack of exercise as factors in the ætiology of rickets, and said that whereas the former was of importance, its place was quite secondary to diet. He gave instances of (1) puppies developing rickets when allowed great freedom but eating a rickets-producing diet; (2) puppies remaining in normal health when confined but receiving a full diet; (3) puppies with rickets cured during confinement when allowed to eat a suitable diet. The lecture was illustrated by many lantern slides, including a number of radiographs, photographs, and microphotographs showing the effects of diet on the formation of the teeth and jaws obtained in Mrs. Mellanby's investigations.

Professor ARTHUR HALL, in proposing a vote of thanks to Professor Mellanby on behalf of the medical profession of the city and district, offered him a hearty welcome. Professor Hall said that the University was lucky in having secured the services of so distinguished a research worker as the first occupant of its new chair of pharmacology, and he congratulated the board of the Royal Infirmary on its far-seeing and progressive policy in electing the new professor as one of its honorary physicians, thus offering the unique opportunity for real progress in the study of pharmacology. In no other centre of medical education in the Kingdom was there such a direct combination of laboratory worker and clinician dealing with this subject. Professor Mellanby's dual appointment as professor of pharmacology and physician to the Royal Infirmary was but one link in the chain which the Faculty of Medicine of the University of Sheffield was forging to bind together the pure laboratory worker and the clinician. Other links consist in the appointment of Professor J. B. Leathes as honorary physiologist to the Royal Infirmary and the Royal Hospital, and the interweaving, during the middle years of the students' curriculum, of laboratory work in anatomy and physiology with elementary clinical hospital practice. By those means it was hoped that the object at which the larger metropolitan schools of medicine were aiming, by means of the "units" system, might be reached by a slightly different procedure, less disturbing to existing conditions and not less effective. Professor Hall extended his welcome also to Mrs. Mellanby, some of whose interesting work on the influence of diet in producing defective teeth had been referred to in the lecture. Mrs. Mellanby could not have settled in a centre where the application of her valuable research work was more urgently required.—In the discussion which followed Dr. A. E. Barnes, Dr. A. E. Naish, Dr. H. Scurfield, Dr. P. J. Hay, Dr. H. Leader, Dr. A. Forbes, Mr. E. F. Finch, Mr. Graham Simpson, Dr. Godfrey Carter, and the President spoke.

LIVERPOOL MEDICAL INSTITUTION.

THE third ordinary meeting of this society was held on Nov. 25th, with Dr. J. E. GEMMELL, the President, in the chair.

Mr. R. E. KELLY read a note on

A Case of So-called Cardiospasm.

The patient was a man of 55 years of age. He had had difficulty in swallowing and regurgitation of food for the past 17 years. X rays showed a typical dilatation of the lower 8 inches of the œsophagus, with a narrowing at the diaphragmatic opening. This opening was in such a position, however, that the ordinary bougies would not engage it, so recourse was made to Plummer's method, whereby a silk thread was used as a guide. The patient swallowed yards and yards of thread until it traversed the whole length of the alimentary canal. With this as a guide, olive-headed bougies through which holes had been perforated were threaded on to the silk, and by graduated sizes the stricture was enlarged sufficiently to take a rubber dilating bag. This was distended with water until the patient had an opening big enough to swallow ordinary diet. Only one series of dilatations were employed and the patient had had no recurrence of the symptoms in six months. Mr. Kelly then discussed the pathology of this rare condition.

Professor E. E. GLYNN and Dr. J. C. MATTHEWS reported a case of

Indigenous Malignant Malaria.

The patient, a girl of 13, was admitted to the Royal Infirmary in extremis and died shortly afterwards. The autopsy revealed the nature of the case, malarial parasites being found in abundance in the bone-marrow and in smears from the spleen. An investigation was carried out by Dr. B. Blacklock, of the Tropical School, to determine where the infection could have been acquired, and it then transpired that the girl had been at a health resort in the north of England at the end of September, just before the fatal illness developed. She had spent part of a day in a valley which contained many hibernating larval and adult anopheles mosquitoes.

Dr. C. O. STALLYBRASS read a paper on

The Significance of Purpuric Eruptions.

He considered that without further pathological advances the present unsatisfactory classification of purpura could not be improved upon. The work of Ledingham and Bedson, Weil, and others on the part played by the diminution or destruction of blood platelets in the production of "idiopathic purpura" was reviewed. The occurrence of hæmorrhages into the skin and elsewhere in a variety of infective conditions was discussed, and recent work on the causation of petechiæ in cerebro-spinal fever and in typhus, such as the finding of meningococci and of Rickettsia bodies in the endothelial cells of the arterioles, was described. In most other diseases the causation of the hæmorrhages was not yet clear. He then compared cerebro-spinal fever, plague, and small-pox, pointing out that in each of these there was an ascending series of cases from the mildest to the most severe type of infection; the latter in all three diseases presented similar symptoms—namely, absence of focal symptoms, the occurrence of purpuric eruptions, and in cerebro-spinal fever and plague, and probably also in small-pox, of a relatively high degree of bacteriæmia. He concluded that in infective diseases (1) purpura usually points to a high degree of bacteriæmia; (2) that the occurrence of groups of hæmorrhagic cases when hæmorrhage is not a normal symptom of the malady indicates exalted virulence of the organism; and (3) that when increased infectivity is present in cases exhibiting purpura, it is the result of bacteriæmia or of other accidental circumstances and not of any inherent change in the properties of the micro-organism. This implied that so far as purpuric cases were concerned increased virulence was not necessarily associated with increased infectivity of the individual micro-organism.

Reviews and Notices of Books.

OPHTHALMOLOGY.

Manual of Ophthalmic Practice. By F. P. MAYNARD, M.B., D.P.H., F.R.C.S., Lieutenant-Colonel, I.M.S. (retired). Calcutta: Thacker, Spink, and Co. 1920. With 12 plates and 133 illustrations. Pp. 316. Rs.12.

Manual of Ophthalmic Operation. Second edition. Same author and publisher. With 6 stereoscopic plates and 137 illustrations. Pp. 248. Rs. 9.

THE first of these manuals is based on lectures delivered at the Calcutta Medical College, and is well adapted to the needs of students and junior practitioners. Considerable space, but not too much, is devoted to methods of examination, and the descriptions of ocular disease are greatly assisted by the numerous illustrations and coloured plates. Most of the former, and some of the latter, are borrowed from older text-books, especially from that of Fuchs, and we note with pleasure the inclusion of several of Professor Arthur Thomson's illustrations of his anatomical preparations, some of which are of great importance in connexion with the circulation of the intra-ocular fluid, and have a practical bearing on the pathology of glaucoma. For the most part the matter of the book is as applicable to the practice of ophthalmology in the West as in the East. An interesting exception to this is the stress laid on acute glaucoma as a complication of senile cataract from swelling of the lens. This agrees with what Colonel R. H. Elliot says in his "Tropical Ophthalmology," recently reviewed in these columns, whereas outside India this complication would appear to be rare. Another point which may have a bearing on the vexed question of the pathology of glaucoma is that, during an epidemic of dropsy in Calcutta in 1909, a number of cases of glaucoma occurred in those attacked, sometimes in three and four members of a family—atypical cases, but accompanied by rise of tension and cupping. The book strikes us as carefully written, and it is eminently readable. We cannot complain that in a work which does not profess to be a complete text-book parts of the subject—for instance, colour-blindness—are somewhat cursorily treated. Two minor criticisms we have to make. First, the author in speaking of the causes of obstruction of the central artery of the retina embolism allows it to retain its traditional first place, whereas in reality it is probably a cause of extreme rarity, the majority of cases being due to a gradual thickening of the internal coat of the artery. Secondly, in the section dealing with the operation for high myopia the author states that it is futile to say that no case is fitted for operation unless the fundus is free from abnormal changes, as no myopic eye of high degree is ever healthy. If for the word fundus macular region be substituted we should disagree, as we consider that in young people high myopia and a healthy macula are by no means incompatible, and that one of the chief things that should decide us in recommending an operation in the rare cases when the question can be entertained is whether or not the macula is normal. On the whole, we can decidedly recommend the book, which will appeal primarily to the author's own pupils, but deserves a wider public, in that it is based on personal experience.

The subject of operative treatment is dealt with separately in a work first published in 1908, which is now brought up to date and republished in a second edition, forming a companion volume to the one just reviewed. It is not a book in which we should look for an account of every ophthalmic operation or even for many of those which are habitually practised. On the other hand, it is an excellent practical description of the more important operations commonly performed, with slight references to a few others. The opening chapters on the preparation of the patient, surgeon, and assistants, instruments, dressings, lotions, &c., are sound and practical. Like other surgeons who have practised in India, the author advocates an antiseptic (as distinguished from an aseptic) solution to wash out the conjunctival sac before cataract operations, though he does not agree with Colonel H. Herbert and Colonel Elliot in making this so strong as 1:3000 perchloride. The solution employed by Lieutenant-Colonel Maynard is 1:5000 mercuric iodide of potassium. In the description of Elliot's trephining operation for glaucoma he gives reasons for making a conjunctival flap slightly different from the one advised by the originator. The best part of the book is undoubtedly that devoted to the description of the operation for senile cataract. The exact incision recommended, a large one lying wholly within the margin of the cornea, is not exactly what the majority of operators in this country favour. That, however, does not matter. What makes the description valuable is that it gives a really excellent analysis of the different stages of the operation, each of which, though it takes so few seconds to perform, yet needs to be thought out in great detail beforehand if all pitfalls are to be avoided. The addition of some stereoscopic plates adds to the value of this part of the book.

Both these volumes are well printed, though one unfortunate misprint post-dates the introduction of the trephining operation for glaucoma by ten years. The two together will form a reliable groundwork for the student, while the fact that each volume is complete in itself will be of convenience to many readers.

SYMPTOMS IN THE DIAGNOSIS OF DISEASE.

Eighth revised edition. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Diagnosis in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. London: Henry Kimpton and Co., Ltd. 1920. Pp. 562. 36*s*.

LABORATORY investigation, by the brilliancy of its results in obscure cases, tends to divert attention from that careful study of the patient and of his symptoms and signs which were the only data available to the great clinicians of the earlier part of last century. It is with this more purely clinical side of medicine that the book is concerned, and the author tells us in his preface that he has decided to omit laboratory methods from the text. Under the plan adopted diagnosis is arrived at by the recognition and grouping of the symptoms and signs present in the particular case. Various chapters deal with what is to be severally learned from a study of the face and head, the hands and arms, the feet, legs, and gait of a patient; other chapters deal with speech, chills, pyrexia, convulsions, cough, pain, tendon reflexes, muscle tone, to specify a few out of many. The section concerned with blood pressure in health and disease will be found especially interesting. The writer points out the importance of estimating the diastolic pressure in addition to the systolic. Where both these pressures are ascertained it becomes possible to estimate the force of the heart's contraction and to gain a pretty accurate idea of the state of the myocardium.

The book is an easy one to read, and it is refreshing from time to time to come across expressions of the author's personal observation and experience. Not that we always find ourselves in agreement with him. For instance, in considering "tracheal tugging" in the diagnosis of aortic aneurysm, the writer goes on to say, "When aneurysm is present a distinct tug will sometimes be felt with each beat of the heart. It is important for us to remember, however, that this sign of aneurysm is rarely met with and is not pathognomonic. In a large experience I do not recall ever meeting with it." Our experience rather has been that of Sir James Kingston Fowler, who refers thus to "tracheal tugging" in diagnosing mediastinal tumour from aneurysm.

> "In order to give it the prominence we believe it deserves, we place first the presence of *tracheal tugging* ..... it is rarely absent when the sac is in contact with the trachea or left bronchus."

We notice a very useful pictorial representation of the position which the leg can be made to assume in cases of sciatica when we are called upon to differentiate between this lesion and arthritis of the hip-joint. In the case of a right-sided sciatica it is possible, the

patient being recumbent, to place the outer malleolus of the right leg above the left patella, and then by rotating the thigh to bring the right knee into contact with the bed. This position cannot be assumed where arthritis of the right hip is present.

The book is illustrated by upwards of 200 diagrams, plates, and figures. Several of these provide opportune illustrations of anatomical points arising in the text. A number of facts are tabulated and the whole forms a very useful compendium of clinical methods.

A TEXT-BOOK OF MATERIA MEDICA.

Third edition. By HENRY G. GREENISH, F.I.C., F.L.S. London: J. and A. Churchill. 1920. Pp. 568. 27*s*.

IN this third edition of Professor Greenish's text-book, the purpose of which is to give an account of the crude drugs of vegetable and animal origin, an increased number of drugs are dealt with, and other additions have been made to the text. The drugs are fully described and their geographical and botanical or zoological sources, their cultivation, collection, and preparation for the market, their constituents and common adulterants are all amply treated. In many cases microscopical characters are given by which the drug may be recognised in the powdered condition and adulteration of the powder detected. For the more important drugs, details of the assay processes by means of which the proportions of active ingredients may be determined are also included. Interesting historical notes are added and an account is given of the trade routes by which drugs and spices have reached their markets in ancient as well as modern times. Our attention was caught by the remark that Ibn Baitar, a writer of the twelfth and thirteenth centuries, described some 2000 drugs in his "Corpus Simplicium Medicamentorum"; it would seem that even in the days when the chief centres of learning were those of the Arabian Empire, the mastering of his materia medica was no light task for the student of physic. Much recent work on the chemical composition of drugs is incorporated, and in this connexion we would suggest that the value of the book would be further increased by the addition of references to the more important original papers. Excellently reproduced photographs are conspicuous among the numerous illustrations. This text-book is the standard English work on pharmacognosy for pharmaceutical students and pharmacists; and to those medical students and practitioners who wish to acquire more than the bare and dull outlines required by the various examining bodies it can be strongly recommended as treating the subject in a fuller and more interesting manner than has hitherto been found possible in the case of text-books written primarily for the medical reader.

PAINLESS CHILDBIRTH,

Eutocia, and Nitrous Oxide-Oxygen Analgesia. By C. HENRY DAVIS, Associate in Obstetrics and Gynæcology in Rush Medical College. London: George Routledge and Sons. 1920. Pp. 160. 5*s*.

NITROUS oxide-oxygen analgesia has of late years been practised extensively in the United States, and in this little work Dr. C. Henry Davis purports to give a brief, scientific, and readable discussion of this method of anæsthesia and also of painless childbirth and what he terms eutocia. The description is certainly brief and readable in the sense that the book is better adapted for the lay public than for the medical profession, but we can hardly call it scientific. Indeed, in view of the real importance of the general adoption of some mode of anæsthesia in childbirth which will be safe and certain, and of the fact that the author claims an improvement on twilight sleep, it is a pity that Dr. Davis has not made better use of his opportunities and given us a really scientific contribution to an important subject. Nitrous oxide-oxygen analgesia has many advantages, although it will never, on account of the cumbrous apparatus and the expense involved, be very generally available. Nevertheless, in certain cases of operative delivery, and under proper conditions, it is especially suitable. It is therefore all the more unfortunate that the value of this book should be discounted so largely by the introduction of unnecessary padding. The author, however, gives an interesting comparative study of 104 cases, and his account of the technique of the method and his conclusions are instructive.

SURGICAL NURSING.

Fourth edition. By RUSSELL HOWARD, C.B.E., M.S., F.R.C.S. London: Edward Arnold. 1920. Pp. 320. 7*s*. 6*d*.

THIS text-book, which has now reached its fourth edition, contains information of great value from both the theoretical and practical standpoints. Definitions of terms are clear and lucid and chapters are conveniently divided into paragraphs which follow each other in well-ordered sequence. The author covers a wide field in surgical nursing. While the chapter on ophthalmic nursing is of little clinical value, and that on the treatment of fractures scarcely up to date, the directions for nasal feeding and the chapters relative to bandaging and the nursing of infants are of exceptional practical value. Within the limits he has set himself, Mr. Howard also deals successfully with massage from the standpoint of the trained nurse who is not a certificated masseuse.

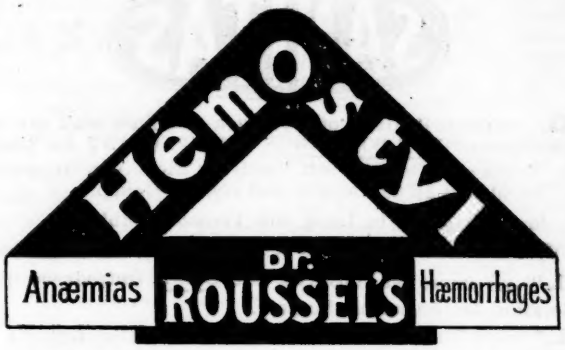
The book is fully illustrated with photographs and diagrams, and is completed by an adequate appendix.

JOURNALS.

Anglo-French Review. November, 1920.—The advancement of scientific medicine by the work of five Frenchmen during the past 50 years is the subject of a contribution by Dr. Leonard Williams to this issue. The five are Armand Trousseau, who died in 1867, but without whom the others could not have been what they were—Trousseau, who found medicine in a condition of stagnation and left it a scientific, respected, and progressive profession; Philippe Ricord, whose labours in venereal disease remain one of the chief glories of French medical science; Claud Bernard, the great physiologist; Jean Martin Charcot, one of the creators of modern neurology; and Louis Pasteur.—Amongst other articles of interest Lord Robert Cecil states his conviction that France stands to gain more than any other European country by the establishment of a League of Nations, despite the widespread belief that reliance for security upon such a League must mean reliance upon illusion.—Mr. Edmund Gosse, in "The Splendour of France," deals with the natural and architectural beauties of the country in a vein perhaps more likely to foster that sacred egoism which sometimes interferes with alliances and threatens the existence of such journals as the *Anglo-French Review*. It goes without saying that this article has the grace and clearness associated with Mr. Gosse's work.

St. Mary's Hospital Gazette. November, 1920.—Dr. Graham Little discusses the significance of the new site of the University of London from the standpoint of the medical schools situated outside the Bloomsbury district.—Dr. C. M. Wilson explains the clinical value in Graves's disease of the test for determination of the basal metabolic rate, described by him in THE LANCET of Nov. 20th, and Mr. C. A. Pannett describes the methods of estimating the risk in proposed operations upon the urinary tract.—Dr. W. H. Willcox contributes an appreciation of nearly 11 years' service to the medical school of Sir John Broadbent, the retiring dean, and the latter announces that £3000 have been collected from members of the staff towards the Appeal Fund.—Among other examination results it is recorded that 14 students from St. Mary's Hospital passed the recent Primary Fellowship examination, and that the University gold medal for the M.B., B.S. has been awarded to Mr. R. M. Handfield-Jones. Professor B. J. Collingwood will in future act with Dr. C. M. Wilson, the new dean, as joint editor of the Gazette.

Zeitschrift für die gesammte Neurologie und Psychiatrie. Redigiert von W. Spielmeyer, München. Berlin: Verlag von Julius Springer, 1920. Band xxii., Hefte 1 and 2. Pp. 120.—This excellent periodical, one that would seem to be essential for all practical neurologists, contains an original paper on the Pathogenesis and Psychical Disturbances as a Result of Inoculation against Rabies, by Professor A. Westphal, of Bonn, and no less than 207 epitomes of recent researches on the anatomy, histology, normal and pathological physiology, psychology, general diagnosis and symptomatology, and therapeutics of the nervous system, special neurology and psychiatry, and forensic psychiatry and cognate subjects. One is struck by the small number of "referate" to contributions by English writers, the chief references being to German, French, and Italian periodicals.



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THE LANCET.

LONDON: SATURDAY, DECEMBER 11, 1920.

Medical Service for Scotland.

AT the end of last week the Consultative Council on Medical and Allied Services for Scotland made a Report to the Scottish Board of Health in reply to the following reference: "To consider and make recommendations as to the systematised provision of such forms of medical and allied services as should in the opinion of the Council be available for the community." The Report forms a succinct and comprehensive plan for a scheme of medical service for the whole country, save that the hospital problem is not the subject of particular recommendations. The question of hospital provision, and its place in relation to the medical service, has been held over until the Report of the Joint Committee, formed by the Scottish and the other Consultative Councils, has been made, and, as the document under review is itself of an interim nature, the delay is wise. As far as a report, which is elaborate and far-reaching although brief, can be said to have a main message, that message may be quoted as follows: "The continuous safeguarding of the family health rather than the occasional treatment of individual illnesses should be the primary interest of all concerned, the doctor, the head of the household, and the community." Here we have the proper note struck for the rendering efficient and harmonious of public and professional effort. The ways in which this safeguarding are to be accomplished are indicated with fullness and moderation.

The Scottish Consultative Council are, for example, satisfied that a general broad plan should be formulated whereby the entire health service of the nation may be established on a broad and comprehensive basis, but they do not contemplate that this service should be provided for all at the public expense, or that it should be furnished to all by a body of State or civic officials and practitioners. They recommend that the State should assume the duty of so organising and supplementing the existing arrangements as to ensure that to every unit of the population such medical advice and treatment as are necessary for the maintenance of health and efficiency shall be readily accessible; and a valuable part of the Report is formed by the indications, in different paragraphs, that there is a large section of the population for whom the organisation of national health service, based upon the family unit and the family doctor, is hard to come by. The position of the professional or business man with ample income, and that of the prudent miner subscribing to a well-organised medical club, differ widely from the position of those innumerable families where a decent competence is enjoyed in time of health, and only in times of health. Here, perhaps, the relations between the family and doctor are of a satisfactory nature for ordinary treatment, but when additional service must be obtained or special skill is needed neither can be procured without resorting to charitable institutions. The first two classes have this in common. They turn to a regular medical attendant, and if further service is required than he can give it is at their disposal. In the case of those with ample income the family doctor has no hesitation in advising them when it is necessary to seek further assistance, nor is there any difficulty in obtaining that assistance either in personnel or material. Similarly, in the case of the miner, despite the obvious difficulties of contract practice, for to him a doctor gives regular attendance in return for weekly contributions and a hospital with all its expert services is usually within reach, or it will be within reach when the interplay between insurance practice and institutional treatment is properly managed. But the position of the third class, a class where charitable assistance would be unsuitable, is dissimilar, for the family doctor cannot do his best nor obtain the collaboration which he needs in serious illness. The family health is, therefore, in danger for lack of aids such as are furnished by the expert consultant and the nursing home which are accessible to the possessors of an ample income, and by the institutional accommodation and special skill which are at the disposal of the poor. The recognition of this inequality is a valuable feature of the Report, and the various developments suggested in remedy will no doubt be considered closely by the Scottish Board of Health.

The Report indicates that a scheme of medical service for Scotland must have local modifications differing from those which are called for in South Britain. The conditions in the Highlands and Islands are well known to be special, and for this region a separate service has already been set up. But there are Lowland areas where the disabilities of medical practice are as great as those in the Highlands proper, while it must always be remembered that the great bulk of the population of Scotland resides in a relatively small area, nearly half of the total population of the country being found in Glasgow and its industrial environment. All the districts present their own problems, and in the rural areas the Report states that there is urgent need of accommodation for cases of ordinary illness which through no lack of skill in the doctor cannot be properly treated at home. The position, it is suggested, can be met by the organisation of treatment at small "hospices," by which is meant the provision of a few beds in an ordinary house within reach of the patient, who would thus remain under the easy supervision of his doctor, but with the ministrations of a district nurse and in a clean, airy, and quiet sickroom. Such hospices could obviously be provided at a cost considerably less than that of a regular local hospital, a cottage hospital, or a fully equipped nursing home, and with the necessary extension of district nursing they would certainly relieve an enormous amount of early sickness. They would also, it seems to us, form a valuable addition to any scheme of preventive medicine by enabling the doctor to detect early and treat properly many incipient conditions. For worse

cases, especially acute medical cases such as pneumonia, nephritis, or heart failure, arrangements, it is suggested, should be made whereby the services could be obtained of neighbouring practitioners who are known to be at the disposal of their colleagues, while certain doctors practising in each district might be chosen by the local medical profession as district consultants to be called in by other practitioners and paid with a retaining fee. We publish in another column a summary of the Recommendations of the Report, which should be studied alike for its value to the medical profession in Scotland and its suggestions for a comprehensive and symmetrical medical service to be at the disposal of all.

Epidemic Threats.

THE civilised world is suddenly becoming aware that the menace of epidemic disease brooks no delay. The meeting on Tuesday last of the Assembly of the League of Nations at Geneva was opened by an appeal from Sir GEORGE FOSTER to set aside formalities and get on with the campaign against typhus in Eastern Europe. After stirring addresses from the representatives of India, Norway, France, and Persia, the delegates vied with one another in promises of immediate financial support, and a committee of three delegates was nominated to secure the funds for an effective campaign before the Assembly rises. Many of the facts have already been recorded in our columns. We publish this week a second article[1] by Dr. F. G. CLEMOW, British Delegate at the Inter-Allied Sanitary Commissions, sitting at Constantinople, giving some interesting figures concerning outbreaks of plague and cholera in Asia Minor and parts of Persia and Mesopotamia, which have taken place since the outbreak of war in 1914. These figures have the failing that they cannot wholly be relied upon, as they came from Turkish sources, but they may be taken as substantially correct, and are of considerable interest to all countries having dealings with any portion of the Turkish Empire. It is quite apparent that the tracts of country reported upon by Dr. CLEMOW have suffered very severely from cholera, and several outbreaks of plague have been reported since the outbreak of hostilities. This state of affairs must give rise to reasonable and deep anxiety in countries trading with the Turkish Empire, even if these regions were enjoying peace and prosperity. Unfortunately, this is not the case. Military expeditions, varying in size from small marauding bands to well-organised forces, have traversed the length and breadth of the country and the population is harassed and unsettled. It is quite impossible to say how far the unsettled state of the country is responsible for the outbreak and continuance of the epidemics, but judging from other parts of the world it is fairly safe to surmise that the spread of cholera is probably due to this cause.

In a report to the Council of the League of Nations upon the existence and effects of typhus and cholera in Poland, made by a small Commission and published in THE LANCET last week, it may have been noticed that the reflections aroused by Dr. CLEMOW'S article on the results of the war are strongly supported by the findings of the Commission. Of the incidence of typhus in Poland the Commission says that many of the areas visited have suffered severely as a result of the war which has been waged there incessantly since 1914, and that the resulting demands have drained the country while enormous destruction of houses has led to gross overcrowding and insanitary conditions. These remarks have special reference to the typhus epidemic in the northern part of the eastern territories of Poland, but a similar lesson emerges from the report when the cholera epidemic is being considered. With reference to cholera the special point made is that the soldiers and prisoners of war have carried the infection with them in their marches and countermarches. In short, in the chaos of affairs, famine, destitution, and civil war have all combined to produce the conditions required for the propagation of such diseases as typhus and cholera, and the toll of life taken by these diseases, and particularly by typhus, will never be accurately known. But there is no doubt that the spread of the disease, as well as of cholera and of relapsing fever, constitute serious threats to the rest of Europe. Speaking of typhus, the Commission warns us that the southern and eastern districts of Poland are most seriously affected. They arrive at the conclusion that outbreaks will continue to occur, the gravity of which will be chiefly determined by such social and economical conditions as are likely to create a state of physical depression among a population submitted or exposed to infection. Great credit is due to the Polish authorities for their early recognition of these facts, and it seems to us to be a responsibility upon the League of Nations to make every effort to obtain from the Allied Governments, or elsehow, the proper support in order to deal with the existent terrors and mitigate the chances of spread. The Red Cross can, and will, alleviate some of the more acute misery, interfere with the progress of epidemic disease, and preserve some of the children upon whom the future of Central Europe depends. But the circumstances appear to call for more activity, which probably means more money than is at the disposal of anyone for the purpose.

Within the last few weeks the events in the Crimea have added yet another possible source of danger to the health of Europe. Dr. CLEMOW writes that Constantinople is at present full to overflowing with 150,000 indigent refugees from the Crimea fleeing before the Bolshevik advance. These destitute people are being sent to various parts of the Ægean in order to relieve congestion in Constantinople. Taking these facts into consideration with the previous reports on health in the Turkish Empire, it is quite certain that here we have conditions which may at any moment give rise to a violent epidemic which may imperil the health of the whole of the Levant, and unless adequate remedial measures are taken may spread into Western Europe. From experience gained in other parts of the world we are inclined to dread cholera more than plague. But from what we know of the sanitary administration of the Eastern Mediterranean we cannot count on satisfactory measures being taken to remedy the state of affairs in the face of one disease more than another. The difficulties are undoubtedly great. Most of the traffic is done in small coasting craft which, as is well known, can easily evade anything of the nature of sanitary supervision. Proper control amongst the islands in the Ægean may be looked upon as an impossibility for the present. It is obvious, therefore, that the other countries of

[1] See THE LANCET, Nov. 20th, p. 1065.

Europe should be thoroughly acquainted with the condition of affairs that exists in the Levant as well as in Poland, and that they must take stringent precautions to protect themselves from the danger of importing communicable disease from that area.

Unhelpful Distinctions.

CLINICIANS examine sights and sounds and smells that originate with patients and do not travel far; pathologists, including bacteriologists, examine solider stuff which can be taken away from patients and worked up in laboratories. It is alone this accidental difference in the portability of morbid emanations that determines the presence of the clinician in his consulting-room, the bacteriologist in his laboratory, the patient sometimes in the one, sometimes in the other. A diagnosis is the resultant probability derived from a consideration of all the evidences, whether or not they can be removed from the patient on a plate. Hence it follows that if for convenience and economy of thought and material different examiners deal with two groups of findings, the diagnosis must either be made by them jointly after agreement or compromise, or else by one of them or some third party who understands the significance of all the findings and takes them all fairly into consideration. We should regard these principles as self-evident were it not that they have become somewhat obscured in the diagnosis of enteric fevers. Dr. R. P. GARROW, in a forcible article on the "myth" of atypical enteric fever in THE LANCET of Oct. 30th, writes of the "clinical chaos resulting from the undue domination of bacteriology (and especially academic bacteriology) over clinical medicine." And in our correspondence columns a fortnight later Dr. W. W. C. TOPLEY breaks a lance for laboratory and Dr. J. A. RYLE for clinical diagnosis. Although there is a large measure of agreement between them neither of these letters can be equitably summarised; they must be read with attention line by line. Their reconciliation would go deep down into the philosophy of medicine and the education of the medical student. We also commend to the careful study of our readers Dr. J. R. HARPER'S article in our present issue on the clinical aspects of enteric group infection as modified by protective inoculation. This observer was happy in his pathological coöperation. For the moment we are only concerned with a side-issue raised by Dr. GARROW in his use of the phrase "academic bacteriology."

Most people derive amusement from shop signs. The "family butcher" and the "monumental mason" often afford us quiet pleasure, but we think that "A—— B——, practical bootmaker," stands, as an advertisement, in a class by itself. The impulse of amusement is checked by reflexion; we endeavour to analyse the cause for this common form of notifying the public that A—— B—— is a master of his art. We dismiss at once the notion that there may be theoretical bootmakers—men versed only in the theory of the art. The explanation lies deeper. A—— B—— is attempting to attract clients by appealing to the general public sentiment, which admires "practical" things as much as it despises knowledge which is apparently unconnected with any useful object. The practical man is universally esteemed, even though DISRAELI in 'Coningsby" defined him as one who practises the errors of his grandfathers. The definition was applied particularly to politicians, but often, also, it is applicable to science. The words usually employed to express the supposed opposites are "practical" and "academic." Dr. GARROW praises the practical bacteriologist and disparages somewhat the academic. What is an academic bacteriologist? Strictly, we suppose, he is one who holds a university appointment as a bacteriologist. It is more difficult to define a practical bacteriologist, unless we mean by the phrase, one who practises methods, demonstrated beyond question to be sound, in the examination of pathological material. The definition is obviously unsatisfactory, and this, no doubt, because the phrase indicates a habit of mind rather than a clear and well understood thing. At the bottom of the distinction lies a prejudice, —a belief held without reason and proof against reason. The prejudice is against those who instinctively doubt accepted beliefs and who constantly endeavour to penetrate further into the unknown. The roots of the antivivisection propaganda spring from a hatred of new knowledge, of the restless inquisitiveness which compels experimental inquiry into the mechanics of the animal body. In scientific circles we think the words "practical" and "academic" should be banned, or used sparely, and never in opposition. The extraordinary triumphs of laboratory investigation of disease during the last 50 years are very largely the result of philosophic inquiry. LISTER, in his original paper on Antiseptics, published in THE LANCET of 1867, wrote of "the flood of light thrown by the philosophic researches of M. PASTEUR" on the causes of the decomposition of organic matter, researches which led to LISTER'S great gift to humanity. Bacteriological science has now contributed so much to medicine that nobody would think of attempting to limit its field of investigation. Clinical medicine and bacteriology are fortunately closely interwoven in this country. Was it not a bacteriologist who first recognised trench fever as a clinical entity and then demonstrated its infective nature?

Annotations.

"Ne quid nimis."

A LOCAL ADVISORY MEDICAL COUNCIL IN BEING.

THE Dawson Report makes the very reasonable recommendation that in any area where there is a health authority a council should be elected by the registered medical practitioners resident in that area to advise the authority. Such a Local Medical Advisory Council has now come into being in Bradford, where a thoroughly representative committee has just been elected to deal with the Health Committee on all subjects affecting the public health of the city. The committee consists of three medical men in consultant practice: Dr. B. Hughes, Dr. G. H. Oliver, and Dr. J. Phillips; nine general practitioners: Dr. J. F. Allen, Dr. F. Beetham, Dr. J. B. Dunlop, Dr. R. A. Lankester, Dr. A. Manknell, Dr. H. Shackleton, Dr. J. V. S. Taylor, Dr. W. N. West Watson, and Dr. J. Wherry Willson; and two whole-time officers: Dr. William Campbell and Dr. H. Vallow. Dr. Watson is honorary secretary of the committee. Questions of hospital medical services and administration are, as is well known, very pressing in Bradford at the present time, and it is essential that there should be a body of medical opinion competent to deal with them. Bradford's example is worthy of imitation elsewhere.

PATCHWORK ANATOMY.

AN author who prepares a text-book of human anatomy with a view to giving what he considers to be of "practical value," aims at an excellent ideal, but ignores the fact that the difficulty in attaining that ideal depends on failure in clinical instruction of the student, not on excessive detail in anatomical teaching. Dr. Pitzman's book[1] is clear and good, as far as it goes, and is an honest attempt to achieve the impossible; moreover, he disarms criticism by anticipating its lines of attack from both sides. We have no quarrel with the introductory chapter and first part (systemic anatomy) of the book. The definitions and accounts of general tissues are short and simple, and comprise matters with which every student and practitioner should be acquainted. It is when we reach the second part, on regional anatomy, that the inherent weakness—to our eyes—of all efforts to compress anatomical information becomes apparent. It is very doubtful whether any item of descriptive anatomy is useless to the practitioner, and it is only the man who does not know any anatomy worth mentioning who cannot find any use for it. The most out-of-the-way, and, to all seeming, academical point of interest has a habit of turning up—if a man knows it—to help in some detail of diagnosis, or to give an interest to some otherwise inconsequent state. The difference between the fine localisation of a cerebral lesion by an expert and the crude rule-of-thumb effort of one ignorant of the detailed anatomy of the organ is an example of the advantage of knowing details of structure, perhaps not of use to-day, but almost certainly wanted to-morrow. We have nothing to say against the accuracy of this particular book, except in so far as omission of much matter can be classed as potential inaccuracy. The schematic method of teaching may explain some points to a student, but, for example, a plan of the circulation in the arm will hardly help the practitioner to find or to avoid the ulnar artery if he wishes to do so; and if one of his patients has had the misfortune to divide some tendon in the hand, and it has retracted upwards, the surgeon may search in vain in a schematic text-book for any indication of the situation in which he may find it. And so on throughout the whole body. Patients will not limit their diseases and injuries to the particular parts with which their doctor may be acquainted, if he belongs to the patchwork anatomy school of practitioners. It is a hard road for most men, that of acquiring knowledge of bodily structure, and it is unfortunately made harder by poor teaching; but it is the only road that can be safely pursued to reach efficiency. It cannot be made shorter, but it can be made more pleasant and interesting. The remedy for the practitioner's neglect of anatomy does not lie in whittling down his knowledge of it; what is needed is greater attention to anatomical diagnosis, and clinical teachers should impress the student with the enormous value of study in this direction.

[1] The Fundamentals of Human Anatomy, including its Borderland Districts. By Marsh Pitzman, A.B., M.D., Professor of Anatomy in the Dental Department of Washington University. London: Henry Kimpton. Pp. 346. 24s.

EXPULSION OF THE PLACENTA BY MOJON'S METHOD.

IN Germany the device of injecting fluid through the umbilical vein into the placenta, with a view to facilitating its detachment from the uterus after birth, has latterly been practised with considerable success. The history of this device is instructive, showing as it does how, after almost a century of oblivion, a discovery may be made afresh or unearthed and turned to greater use than its first sponsors found for it. In 1826 Benedetto Mojon, professor of anatomy and physiology in Genoa, published an account of his experiments, in the course of which he injected cold water, to which acids had been added, into the umbilical vein. It appears that several obstetricians, including Naegele, made practical use of this device, and achieved excellent results in cases of adherent placenta. The oblivion that overtook this method may possibly have been the sequel to sepsis or air embolism. At all events it disappeared altogether, and it was not revived till 1914, when Gabaston, of Buenos Aires, published a method for artificially detaching the placenta. Since then, under the title of "Gabaston's Method," several publications have appeared on the subject, and it has even been claimed that this method has reduced the morbidity and mortality from retention of the placenta to nil. Such a claim, within so short an interval of the modern revival of this method, throws more light on the psychology of the claimant than on the merits of the treatment under review, but its rationale is certainly plausible and its actual achievements are encouraging. One of the most instructive papers on this subject was published in 1919 by E. Frey-Bolli,[1] who, in 53 out of 3201 confinements, had treated retention of the placenta by the injection of 300 to 500 g. of normal saline solution or boiled water into the umbilical vein. When he failed of his object he let the fluid escape by the vein and then repeated the injection. In 47 per cent. the placenta came away of itself, and in 41·5 per cent. after slight pressure on the uterus. Only in a few cases did he have to supplement the injection with Credé's method or manual extraction. In the same year K. Borgberg, of Copenhagen, reported good results, and in the October number of *Hygiea* for 1920 W. Gejrot, of Stockholm, has contributed a paper in which his verdict is favourable. Both he and Fjeldborg, of Copenhagen, have observed cases terminating fatally soon after an injection, but in neither case did the necropsy reveal air embolism, and there was little or no evidence to associate these deaths with the treatment adopted. Its mode of action may depend on more than one factor, but the chief would seem to be stimulation of the uterus by the enlargement of the placenta and the formation of a retro-placental hydrometra. Gejrot recommends the injection of fluid cooled to a temperature of 12°–15° C., on the assumption that cold water is more likely to stimulate uterine contractions than water at body temperature.

[1] Correspondenzblatt f. Schweizer Aerzte.

MEDICINE IN THE LAY PRESS.

Dr. Georges Bourgeau, a French physician, chose as the subject of his thesis for the doctorate in medicine in 1916 "Les Erreurs et les Dangers de la Grande Presse en Matière Médicale." The *Journal of the American Medical Association* recently referred with approval to Dr. Bourgeau's criticisms of the lay journalist's attitude towards medicine, and confirmed them from its experience of the newspapers of the United States. We would express at once our keen appreciation of the benefit derived by medicine in the United Kingdom from the publicity given to its interests in lay journals when the matter so made known is based upon authentic information and is set out by writers qualified to deal with it. We need hardly, for example, remind our readers of the value of the support won thus for the voluntary hospitals, or for the endowment of scientific research in so far as this is promoted through the interest awakened in it among laymen. Scientific research, however, does not always gain by unsought and misdirected advertisement. An appreciable amount of objectionable matter dealing with scientific subjects is to be found in newspapers which make it part of their policy to stimulate interest without paying studious regard to accuracy. When a scientific worker after laborious research seems to be nearing a conclusion with regard to disease, such as may prove useful to his fellow men, it is generally a matter rather for temperate and considered congratulation from his scientific colleagues than for general and indiscriminating acclamation. A step forward may have been won, and a discovery made of considerable ultimate value to the community, but nothing will be gained by exaggeration of the occasion. A new vaccine need not be hailed as though the elixir of life were about to be issued in glass tubes from modern labora-

tories. Disappointments follow when a new method of treatment has not been found to justify in practice the panegyrics with which a newspaper writer has hailed its introduction or suggestion. There are unavoidable failures such as deaths under anæsthetics or errors of diagnosis, alleged cures by the unqualified where the qualified practitioner is proclaimed as having tried in vain to bring relief. The exploitation of such topics as these merely for the sake of exciting the morbid curiosity of the public is not unknown here, and we gather that it finds its parallel in America. There is also to be mentioned the insertion in newspapers of advertisements of alleged remedies which would not find a place in the columns of any respectable journal, if its proprietors were first to satisfy themselves that the promises of cure held out had at least a reasonable prospect of fulfilment. A respectable newspaper does not insert the prospectus of a new company which its financial editor is prepared to denounce as a swindle. It would not seem unreasonable to ask for similar discrimination where not only the pockets of the public are concerned but their health as well. We say this while fully recognising the right of the public to be informed as to subjects affecting its health, and of newspapers to supply it with the information. Temperate and well-informed exposition of such matters are of value to all; we only desire the elimination of the merely sensational, and above all of the inaccurate or untrue.

EAR DAMAGE IN NOISY INDUSTRIES.

SUCH attention as has been paid to the effect of noise on the industrial worker has left only contradictory and inapplicable conclusions. The one clearly established fact would seem to be that in certain industries the worker's powers of hearing diminish in proportion to the sojourn in the industry, and out of all proportion to the onset of deafness in workers at less noisy trades. Dr. D. Gilbert,[1] the inspector-general of the new medical department in the Belgian Ministry of Industry and Labour, issued some months ago a challenge to otologists and physiologists which should be bearing fruit ere long. As he then pointed out, we have no uniform standards from which to deduce rules for the prevention of industrial deafness. Are we, in the first place, to accept the theory of Helmholtz or of Bonnier or of Marage to explain the physiological mechanism of hearing? What are the respective rôles of pitch, intensity, timbre, and duration of sound in producing auditory fatigue and injury to the internal ear? How far is "solid" conduction of sound responsible for the injuries and how best can it be avoided? These are among the questions of first-rate practical importance which need scientific investigation. In the meantime there are certain standards which might be arrived at tentatively by a single conference of factory medical officers. Such, for example, as a standard fixing the limits of auditory acuity between which it should be permissible to employ workers in a given category of noisy trades. Since it would obviously be advantageous that these standards should from the outset be international, the subject might well occupy the attention of the International Labour Bureau at Geneva.

A PUBLIC DENTAL SERVICE AT FOLKESTONE.

THE Committee appointed to inquire into the extent and gravity of the evils of dental practice by persons not qualified under the Dentists Act has emphasised in a report the fact that the State cannot afford to allow the health of the nation to be continuously undermined by dental neglect, and has suggested that every possible means should be employed for enlightening the public as to the need for conservative treatment of diseased teeth. While provision is rapidly being made for the treatment of school children, very little progress has taken place in the creation of centres where adults of small means can obtain efficient dentistry at moderate fees. In some districts this problem has been solved by the creation of a public dental service, Brighton, Reading, and Bournemouth having been first in the field,[1] and the experiment has, we believe, worked with satisfactory results. At the present time one of the difficulties in forming these centres lies in the huge demands that are being made upon the public purse and the great increase in local taxation; where authorities admit that public dental service should be given it is incumbent upon them to equip such centres at the least possible cost. A centre has recently been created in Folkestone, and here it is satisfactory to note that use is being made of the offices occupied during the day by the school dental clinic. The adult dental clinic is opened for the treatment of patients from the hours of 4 to 6 P.M. daily, with the exception of Saturdays and Sundays, and arrangements have been made for the same dental practitioner to be in attendance during visiting hours, thereby ensuring that patients who require to pay more than one visit will always be treated by the same dentist. The general arrangements of the clinic are to be under the control of the town council, and the installation of surgical and mechanical appliances has been made possible by the liberality of Sir Philip Sassoon.

THROAT OPERATIONS ON OUT-PATIENTS.

IN commenting upon the death of a child who died after operation for tonsils and adenoids the City coroner said that the child ought to have been detained in hospital for a day or two. Dr. Waldo was right to point out the ideals, but, alas, many institutions have to do the best they can with the means at their disposal. At all our large hospitals many operations are performed for the removal of tonsils and adenoids in children. The little patients are brought up having been prepared according to instructions given to their parents. They are operated on and taken away again within a few hours unless there is anything to show danger in this course. If, as Dr. Waldo suggests, every patient who has undergone this operation were kept in hospital for a day or two only very few of these operations could be done; there would not be the beds available to permit of more. Consequently numbers of children would have to keep their peccant tonsils and their adenoids and the accompanying poor health. Taking the line of the greatest benefit for the greatest number, the hospitals are bound to act as they now do. They run the risk of accidents such as that which led to this particular inquiry. The risk is fortunately slight. Death from post-anæsthetic toxæmia, of which this child apparently afforded an example, is uncommon. Moreover, the condition, when severe, is often unaffected by treatment, so that even under observation in hospital the course of events might have been the same. With regard to the anæsthetic that had been chosen in this case, and to the administration of sugar before anæsthesia, we are here on highly controversial matters, even among experts. Such a situation is one in which we feel that every judge, magistrate, or coroner should avoid saying anything which might direct censure in the minds of friends and relatives of the deceased upon those who have exerted their knowledge and skill in behalf of the deceased, for the censure might be unjustified.

A PROPOSED SUBSTITUTE FOR ERGOT.

IN view of the difficulties under which so many hospitals are now labouring, the cost of drugs assumes a special importance. The present high price of ergot, for example, largely due to the absence of Russian supplies, has stimulated inquiries as to the possibility of finding a new source or a substitute. It would probably be possible to cultivate the fungus in this country by inoculating fields of rye, but any possible advantages would be outweighed by the danger attaching to the introduction in quantity of an organism which for centuries caused outbreaks of disease on

[1] L'Influence des Bruits Industriels, Bull. du Service Médicale du Travail, No. 1, p. 30.

[1] See THE LANCET, 1917, i., 505.

the continent, and to a lesser extent in these islands, reaching at times the dimensions of a plague. According to a statement recently published in Germany,[1] infusions and macerations of shepherd's purse, *Capsella Bursa-pastoris*, exert on the isolated guinea-pig's uterus an action which is very similar to that of ergot, and it is suggested that it may be found possible to use this plant, which is one of our commonest weeds, in place of the expensive drug now so widely employed. Although very great variability in the potency of the samples of plants and preparations examined was observed—some were, in fact, found to be inactive—at least it may be said that the pharmacological action and chemical composition of the plant are worthy of the fullest investigation. Other lines of attack are, however, available in addition; the three principal physiologically active constituents of ergot—ergotoxine, ergamine, and tyramine—are obtainable commercially, and by a proper use of one or more of them, it may be added, the variability in composition and action of the entire drug can be obviated. Of these constituents the two latter can be artificially prepared and it is possible that by devising comparatively inexpensive processes of manufacture synthetic chemistry will in time furnish at least a partial solution of this problem.

DR. H. SCURFIELD'S RETIREMENT.

THE announcement of Dr. Harold Scurfield's resignation of the post of medical officer of health of Sheffield, which he has held for the last 17 years, was a surprise and something of a blow to his medical colleagues. During his life in Sheffield Dr. Scurfield has won the respect and esteem of all with whom he has come in contact. His wide knowledge of all subjects connected with public health, his deep and particular interest in the problems of tuberculosis, infant welfare, and school hygiene, combined with the determined championship of any cause which he has taken up, have made him a power for good which it will be difficult to replace. In addition to his ordinary public duties Dr. Scurfield has for many years rendered valuable services to the University of Sheffield as professor of public health. In retiring from official work whilst still active and vigorous, he carries with him the best wishes of his medical colleagues. We may hope that his ripe judgment and wide experience will still be available in connexion with the important subjects upon which he is a recognised authority.

CHADWICK'S MESSAGE FOR TO-DAY.

IN his Chadwick public lecture delivered at Manchester on Dec. 7th Sir Malcolm Morris explained that his object was to discuss some urgent public health questions of the moment in the light of the teachings of Edwin Chadwick, whose ideal was the prevention of disease by the creation of a wholesome environment and the avoidance of modes of life detrimental to health and well-being. The prevention of disease, not the mere staying of its course, but the sweeping away of the conditions that bring it into being, was still the ultimate aim of all enlightened sanitary effort. The public health movement would never come to full fruition until the individual citizen recognised, in the first place, that it was his duty to take as much care of his health as of his property; and, in the second place, that if he contracted disease, it was equally his duty to keep it to himself. Talk to John Smith of his rights and he would turn a ready ear. What we had to do was to bring him to a sense of his privileges. We must persevere until we had made him feel that the medical officer of health was his best friend and that the preservation of health was a much more important matter than the acquisition of wealth. During 50 years in the medical profession, Sir Malcolm Morris said that he had often asked himself how much of the sickness that still abounded was avoidable, gratuitous, self-incurred? It was his deliberate opinion, after much pondering, that at least 75 per cent. of it was the penalty inflicted by the nature of things for violations of the elementary laws of health, violations which consisted in carelessness, in neglect, in folly, in excess of all kinds. Sir Malcolm Morris might have had in his mind a sentence from the first number of a new American journal, entitled *Rational Living*, which runs:—

> Possibly you will find the root of the evil yourself. If you have corrected all your corrigible transgressions and after a reasonable length of time you are still suffering from your old symptoms, see a physician.

But our contemporary has overlooked the fact that it is the physician himself who has shown the way to correct the corrigible transgressions.

[1] H. Kochmann: Münchener medizinische Wochenschrift, 1920, No. 45.

PRIMARY GASTRIC SARCOMA: A SERIES OF CASES.

ACCORDING to Dr. William D. Haggard,[1] professor of surgery in Vanderbilt University, primary gastric sarcoma is one of the rarest surgical diseases. In 27,250 abdominal sections at the Mayo Clinic in five years there were only 8 sarcomata of the stomach, and of 2067 malignant tumours at this clinic between 1908 and 1920 only 13 proved to be sarcomata, so that there was one sarcoma to 159 carcinomata of the stomach. The condition may occur at any age, the youngest case being in a boy of 3½ years (Finlayson), and the oldest in a man of 85 (Gosset), and is most frequent after the age of 40. Of 66 cases in which the sexes were stated 33 were males and 33 females. The size of the tumour varies from that of a bird's egg to that of the case reported by Baldy, in which the tumour filled the whole abdomen. Histologically the tumour may be round cell, spindle cell, mixed cell, lymphosarcoma, myosarcoma, fibrosarcoma, angiosarcoma, or endothelioma. The round-cell variety, which is the most malignant, is apt to be mistaken for cancer. It usually infiltrates and most often involves the pyloric end of the stomach, but rarely produces stenosis. The spindle-cell sarcoma is apt to be circumscribed and is frequently pedunculated. The diagnosis before operation is often impossible, especially as there may be no gastric symptoms whatever. Hæmorrhage from the stomach and blood in the stools are frequent, especially in the round-cell variety, though not so frequent as in carcinoma. But in sarcoma, unlike ulcer or carcinoma, there is not a long history of dyspepsia, and there are less likely to be signs of obstruction. On the other hand, there is more likely to be a palpable mass in sarcoma. Rapid development of anæmia and debility, with loss of weight and cachexia, accompanied by early, rather severe, and more or less persistent pain in the epigastrium, and the absence of any long-standing history of dyspepsia and pyloric obstruction, are also suggestive of sarcoma. In addition to his own case of fibro-sarcoma in a girl of 17, in which complete recovery followed operation, Dr. Haggard gives a résumé of 13 cases operated on at the Mayo Clinic between 1908 and 1920.

POST-ANÆSTHETIC MUTISM.

THE interesting case of loss of speech after an anæsthetic, which we publish on p. 1198, directs attention to other mental effects which are occasionally observed after the taking of these drugs. With rare exceptions, these are much more often functional in all probability than due to any organic lesions. Cerebral hæmorrhage or thrombosis resulting in definite hemiplegia has certainly occurred more than once during the inhalation of and the recovery from anæsthetics, but such an event is rarer than the appearance of emotional or mental alterations, which also may last for some time. It is difficult to ascribe these to organic lesions. It happens not very infrequently that following an anæthesia, and starting soon after recovery or sometimes days later, a patient's mental condition becomes abnormal. There may be actual mania or there may be melancholic symptoms. An attack of this

[1] Surgery, Gynecology, Obstetrics, London, 1920.

kind is rare unless the patient has been previously affected in the same way. Attacks of an hysterical nature soon after recovering consciousness are not at all infrequent among emotional persons. In these there may be great excitement. Delirium lasting for some days has been known to follow anæsthesia. There may also be speech defects, and loss of speech certainly functional in character has occurred after a short inhalation of nitrous oxide, without, however, persisting long. It is noticeable that Surgeon Lieutenant-Commander A. B. Clark's patient was, apparently, the kind of subject in whom congestion of the vessels of the head is particularly apt to occur during narcosis, and that he was inhaling anæsthetics for a long space of time, over two hours. It appears that, whether there was a structural lesion or not to account for the motor aphasia, there was certainly present also an emotional condition of the mind not very infrequent after anæsthesia in neurotic people. The mental, or as Dr. Dudley Buxton calls them, "quasi-mental," phenomena which occur during and after narcosis provide an interesting and a little-trodden field for investigation. It is probable that wide study would reveal a number of curious mental after-effects, of longer or shorter duration, in persons who have been through anæsthesia—effects which, up to the present, have been little noticed and are quite unexplained.

THE MEDICAL DIRECTORY.

THE Medical Directory for 1921 makes its appearance betimes. It is specially welcome in view of the general post which has marked the settling down to more normal conditions of medical practice. The slow rate of demobilisation of temporary military and naval medical officers and their difficulty in securing suitable consulting-rooms when released from military duty have made the last two issues of the Directory indispensable for reference. The 1921 volume is nearly the same size as its predecessor. The numerical summary of the medical profession, which is a little hard to find in the present issue, shows 44,926 names, an increase of 666 over 1920. Two more pages are devoted to the services, five more to dental surgeons, and eight more to practitioners residing abroad. An alteration in paragraphing has crowded out the asterisks which used to indicate that the infirmation given had not been confirmed by the return of the annual circular. We trust that this will not lead to any less diligence on the part of publisher or of those who supply the information in keeping the record scrupulously up to date. It is true that the Directory has no legal value as evidence, but it is nevertheless freely used by public bodies for supplementing the exiguous record of the Medical Register. We regret the dropping of a useful summary of the principal laws affecting the medical profession, and hope to see it again next year in revised form, along with the list of spas and health resorts abroad. Such little up-to-datenesses are welcome as the personnel of the Medical Research Council and of the medical department of the Board of Education. The distinguished medical staff at the London County Council still remains anonymous. The Directory is, however, as nearly perfect as most human things.

THE progress of plague, yellow fever, and cholera throughout the world, for the first three years of the duration of the war, is the subject of a Report made this week by Dr. R. Bruce Low to the Ministry of Health. It will be read with interest in connexion with epidemic threats to the world.

LOCAL AUTHORITIES AND THE IRISH L.G.B.—During the past few weeks the Local Government Board in Ireland has obtained conditional orders of mandamus against some 20 or 30 local authorities, including the Corporation of Dublin, directing them to produce their books for audit. On the other hand, a few local authorities, notably the County Council of Galway, which had adopted resolutions declining to recognise the Local Government Board, have rescinded these resolutions and expressed their willingness to abide by the usual regulations. There are hopes that some working method may be devised so that the usual grants will be forthcoming.

CHOLERA IN TURKEY AND ADJOINING COUNTRIES SINCE 1914.

BY F. G. CLEMOW, C.M.G., M.D.,
BRITISH DELEGATE, INTER-ALLIED SANITARY COMMISSIONS, CONSTANTINOPLE.

IN a former letter (THE LANCET, Nov. 20th) I gave a brief account, based upon unpublished Turkish records, of the prevalence of plague in various parts of the former Turkish Empire since 1914. In the present I shall endeavour to do the same for cholera, adding, however, some information from other (mostly official) sources upon the disease in some adjoining countries. The figures must be accepted with the same limitations as those for plague. Like the latter, the Turkish figures are said to include both military and civil returns.

The severe epidemic of cholera in and near Constantinople during the Turco-Balkan War (1912–13) will be recalled. A revival of the infection occurred in August, 1913, and from then to the end of the year 191 cases, 13 suspected cases, and 82 deaths were registered in the capital. In 1914 the returns were as follows:—

	Cases.	Deaths.		Cases.	Deaths.
January	20	10	April	4	2
February ...	6	3	July	2	1
March	2	0			

Between July, 1914, and May, 1916, there is no mention of cholera in Constantinople. But between May 19th, 1916, and Feb. 14th, 1917, 291 cases with 139 deaths were recorded in the capital, followed by 10 cases and and 6 deaths in March, 16 cases and 12 deaths in April, 2 cases and 1 death in May, and 1 case in June. Another apparently cholera-free interval of over two years followed; then on August 25th–26th, 1918, 2 cases were seen, between Sept. 6th and 13th 5 fatal cases, and on Dec. 1st 1 case. In March, 1919, a case of laboratory infection occurred; and in May, July, and August a few cases, some confirmed, some only suspected, were again recorded. The capital has since been free from the disease.

Some pre-war figures of cholera in other parts of Turkey may also be quoted as forming links between the past and present records. In January, 1914, the following returns were made:—

	Cases.	Deaths.		Cases.	Deaths.
Aivalik	9	9	Rodosto	15	9
Dardanelles ...	13	4	Smyrna	3	0
Gallipoli	1	1	Trebizond... ...	15	11
Derindje	2	0			

A more serious outbreak occurred at Adrianople, as shown by the following figures:—

	Cases.	Deaths.		Cases.	Deaths.
1914: February	37	10	1914: April... ...	34	31
,, March ...	53	42	,, May	18	11

Some later cases were seen at Trebizond and the Dardanelles, and a few cases were recorded in Kirkkilissé, Eregli (near Koniah), and Yanina.

There appear to be no records of cholera in any part of Turkey in the year 1915. Passing mention may be made of a return of 3 cases of the disease in Kazvin in November, 1915, and of 10 cases with 7 deaths in Kermanshah in July, 1916; but these are Persian towns, and are only incidentally mentioned in the Turkish reports. In the spring of 1916 cholera reappeared in many parts of Turkey, and an epidemic of considerable severity followed, as shown by the following figures.

From this table it will be seen that the epidemic was exceedingly widely spread, and that the highest figures were returned from Smyrna, Damascus, and Aleppo, and from the neighbourhood of those towns.

After February, 1917, the records are less complete. Some portions of territory had already passed out of Turkish possession; others fluctuated between Turkish and Russian occupation; from yet others returns were irregularly received; and complete records exist only in the case of certain towns. From these it has been

Cholera in Turkey from May 19th, 1916, to Feb. 14th, 1917.

	Cases.	Deaths.	Date of first case.
Constantinople	291	139	May 19th, 1916.
Smyrna	129	74	,, 21st.
Environs of Smyrna	1164	510	—
Marmora littoral	276	111	,, 28th (at Panderma).
Chataldja...	7	4	... June 13th.
Black Sea littoral	807	446	... May 20th (at Ordou). ,, 22nd (at Samsoun).
Broussa and environs ...	137	74	... July 12th.
Castamouni ,, ...	190	118	... ,, 1st.
Koniah ,, ...	603	251	... June 14th.
Angora ,, ...	242	119	... July 7th.
Adana ,, ...	171	93	... June 4th.
Aleppo ,, ...	2020	1203	... May.
Damascus	426	215	... ,, 19th.
,, environs of ...	1594	713	... —
Beirut	64	31	... June 10th.
Mt. Lebanon	287	129	... May 21st.
Jerusalem and environs ...	183	116	... May 21st (at Bethlehem).
Diarbekir ,, ...	472	339	... ,, 20th.
Sivas ,, ...	206	87	... ,, 21st.
Mosul ,, ...	130	61	... ,, 30th.
Bagdad ,, ...	179	76	... June 4th.

possible to construct a series of tabular statements, showing the monthly returns of cases and deaths. It will suffice here to give the following summaries for the year 1917. (The places named are grouped, as far as possible, according to their geographical position.)

Ismidt, 39 cases, 21 deaths (July–Sept.). Duzdje, 47 c., 25 d. (Aug.–Sept.). Ada-Bazar, 6 c., 1 d. (Aug.). Seyitlar, 19 c., 7 d. (Aug.). Sivas, 113 c. (April–Oct.). Yozghat (Sivas vilayet), 4 c., 3 d. (March). Ispir (do.), 31 c., 6 d. (July–Aug.). Unieh (near Trebizond), 3 c., 1 d. (May–July). Fatsa (do.), 1 c., 1 d. (July). Tireboli (do.), 2 c., 1 d. (May–July). Kerasonde, 33 c., 19 d. (May–July). Samsoun, 29 c., 8 d. (May–Aug.). Djaniki, 1 c. (May). Tarsus, 8 c. (May–Aug.). Adana, 124 c., 44 d. (May–Nov.). Djeihan, 2 c. (June–Aug.). Castamouni, 6 c., 5 d. (April and July). Bolou, 12 c., 9 d. (July–Aug.). Angora, 3 c., 1 d. (March). Tokat, 24 c., 6 d. (Mar.–Aug.). Koniah, 59 c., 36 d. (July–Sept.). Vilayet of Ma'muriet-ul-Aziz, 17 c., 5 d. (Sept.). Su-Shehir, 4 c. (Apr.–July). Eski-Shehir, 2 c. (May). Merzifun, 40 c., 17 d. (Mar.–April, Sept., and Dec.). Amasia, 27 c., 10 d. (Mar.–May and Aug.). Chorum, 1 c., 1 d. (March). Adrianople, 2 c. (Nov.). Hama, 3 c., 2 d. in June; 88 c., 86 d. in August. (These last two figures, if correct, would give a mortality of nearly 100 per cent. They may, perhaps, be explained by supposing that there were 88 non-fatal and 86 fatal cases, or 174 cases in all, with 86 deaths.) Aleppo, 155 c., 73 d. (March–Nov.). Damascus, 100 c., 35 d. (May–Oct.). Nasirieh, 2 c., 1 d. (May and Aug.). Gaza, 1 c. (July). Cæsarea, 3 c., 3 d. (July). Beirut, 20 c., 13 d. (June–Oct.). Mt. Lebanon, 21 c., 8 d. (Sept. and Nov.). Baka'a (Lebanon), 11 c., 5 d. (June and Aug.). Messoudieh, 1 c. (June). Tabarieh, 62 c., 27 d. (July–Dec.). Islahieh, 4 c., 3 d. (Aug.). Jaffa, 1 c. (Sept.). Haifa, 2 c. (Aug. and Oct.). Safat, 6 c., 4 d. (Aug.–Nov.). Omranieh, 4 c., 1 d. (Aug.). Shuf, 1 c., 1 d. (July). Salt, 2 c., 1 d. (July). Tebuk (on the Hedjaz Railway), 3 c. (June). Jerusalem, 47 c., 15 d. (July–Sept.). Deir-ez-Zor, 17 c., 9 d. (Nov.–Dec.). Mosul, 497 c., 100 d. (July–Oct.). Diarbekir, 89 c. (March–Dec.). Ordou, 91 c., 39 d. (May–Aug.). Ourfa, 16 c., 12 d. (March and July–Sept.).

From the later months of 1917 until April, 1918, records are entirely wanted. But for the year 1918, after April, the following returns exist:—

Trebizond, 123 c., 60 d. (July–Nov.). Offe, 1 c. in Aug., 1 c. in Nov. Charshamba, 1 c. (Sept.). Erzeroum, 2 c. (Oct.). Sivas, 10 c. (Aug. and Sept.). Su-Shehir, 3 c., 2 d. (Oct.). Tokat, 3 c. (Aug. and Sept.). Niksar, 4 c. (Sept.). Eski-Shehir, 6 c., 2 d. (July and Aug.). Samsoun, 93 c., 41 d. (Aug.–Oct.). Sinope, 4 c. (Oct.). Mardin, 4 c., 4 d. (June). Karahissar-Sharki, 1 c., 1 d. (Aug.). Afioun-Karahissar, 1 c., 1 d. (Aug.). Panderma, 4 c. (May–June). Karassi (Dardanelles), 1 c. (July). Smyrna, 1 c., 1 d. (Sept.). Bodrum, 1 c. (Sept.), Aleppo, 47 c., 31 d. (April–July). Aintab, 1 c., 1 d. (Sept.). Damascus, 24 c., 10 d. (April–Sept.). Beirut, 1 c., 1 d. (Aug.). Mt. Lebanon, 13 c., 4 d. (July–Aug.). Baka'a, 1 c. (July), Zahleh, 1 c., 1 d. (Aug.). Safat, 1 c., 1 d. (April). Diarbekir, 9 c., 1 d. in April; 1 c. in Sept. Mosul, 6 c. (June–Sept.). Ourfa, 2 c., 1 c. (June). Deir-ez-Zor, 6 c., 5 d. (July–Aug.).

In 1919 cholera caused but little trouble in Turkey. The occurrence of a few cases in Constantinople has been already mentioned. In January there was 1 case at Karahissar-Sharki, and 1 (suspected) at Kalikratia, on the Marmora; in February there were 8 cases at Afioun-Karahissar; and in August 2 cases at Samsoun. The disease has not been reported from any part of the country in the present year.

Owing to the disturbed conditions prevailing in Russia, the information received here respecting outbreaks of cholera there has been far from complete. Something, however, has been learnt as to its prevalence in South Russia and the Crimea during the past year and a half. The disease seems first to have been seen in July, 1919, in a village some 40 miles north of Odessa, from which that town took its water-supply. In August it was epidemic in Odessa, and 250 cases were recorded there in the week ending August 21st. Early in September it was affirmed that about 150 fresh cases were occurring daily, and that the total number of cases had already reached 3000. During the autumn, cholera was also known to be present in Sevastopol, Novorossiisk, Batoum, and perhaps elsewhere. In the winter months it almost or quite died down, though as late as February, 1920, "foul" bills of health were still being given to ships sailing from Odessa. On March 30th the disease reappeared in Theodosia, among troops evacuated from Novorossiisk and Tuapse (from which, however, no cases had been reported). From Theodosia the disease spread, by sea and land, to Sevastopol, Eupatoria, Yalta, Simferopol, and Djankoi, and later to other places. From the irregular and intermittent returns received here it may be gathered that the epidemic was a severe one. By May 8th the total of cases had reached 264. The disease was occurring in a severe form, death often taking place in 24–48 hours. Large numbers died in the trains and boats between the various Crimean towns. The later returns have been as follows:—

	Cases.
May 3rd–13th	70
,, 13th–18th	21
,, 18th–23rd	13
,, 23rd–31st	55
,, 31st–June 6th	103
Week ending—	
June 12th	163
,, 19th	388
Week ending—	
June 26th	156
July 5th (sic) ... ... (and 57* suspected)	46
,, 13th (sic) ... ... (and 20* suspected)	19
,, 28th (sic) ... ... (and 15* suspected)	8

* In Sevastopol.

In Odessa 7 suspected cases occurred between July 16th and 22nd (annotation on bills of health of a steamer sailing thence). No other information has been received from that town.

The outbreak in the Crimea seems to have died out by the end of August. The following were the official totals of cases:—

Theodosia ...	325	Djankoi	205	Melitopol	122
Sevastopol ...	1045	Armanski	155	Yalta district ...	288
Eupatoria ...	509	Karasubazar ...	277	Other places ...	771
Simferopol ...	1504	Kerch	113		
Yalta	137	Bakchisarai ...	11	Total	5462

The total number of cases was 5462, and of deaths 1956.

From Tiflis cholera was first reported in July. In July and August it has been learnt that 23 cases with 17 deaths occurred, and in September there were 42 cases with 18 deaths. A few later cases brought the total up to 70; and in addition it was reported that 70 suspected cases had been seen, causing 8 deaths in August and 4 in September. No other town in Georgia was believed to have become infected.

Constantinople, Nov. 24th.

LARGE GRANTS FOR HEALTH PURPOSES IN MANCHESTER.—The Manchester City Council at its last meeting sanctioned the spending of £458,751 for the building and equipment of a children's hospital of 500 beds at Abergele Sanatorium. No member denied the need for such a hospital, but a good deal of doubt was expressed as to whether the time was opportune for so large a financial undertaking. It was stated that it would represent a 3*d.* rate in the city. It was estimated that there were nearly 4000 tuberculous children in the city. The estimated cost per bed was put at over £1000, towards the cost of which the Government contributes £180 per bed, plus 50 per cent. of the cost of maintenance. The council also approved the building and equipment of an adults' home at the Abergele Sanatorium at a cost of £35,535. On the recommendation of the public health committee it was further agreed to make an additional grant of £400 to the Manchester and Salford Nursing Association in recognition of the valuable services it is giving to practitioners in the treatment of disease.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WE gave last week virtually in full the important report of the Education Committee presented to the General Council on the subject of the Revision of the Curriculum. This report was discussed in the Council on Thursday and Friday, Nov. 25th and 26th.

Revision of the Curriculum.

Dr. J. Y. MACKAY reviewed the report and moved the adoption of the first recommendation contained in it.—Dr. J. C. MCVAIL, in seconding, said the report was opportune in that now secondary schools were in a better position to teach physics and chemistry, some biology also; and in view of the large numbers entering the profession it would be easier to raise the standard of medical education.

Mr. H. J. WARING moved an amendment substituting for paras. (*a*) and (*b*) of the recommendation the words—

"That before registration in the Students' Register every applicant shall be required to have passed an examination in general education, and, in addition, to have attended approved courses in elementary physics, elementary chemistry (organic and inorganic), and general biology, and to have passed an examination in these subjects conducted or recognised by one of the licensing bodies."

Sir NORMAN MOORE seconded the amendment. He contended that under this provision fuller use would be made of the last school year, and it would be less probable that there would be two examinations in the preliminary sciences, which seemed likely on the Committee's recommendations.—Dr. RUSSELL WELLS regretted the absence of any concrete suggestion, in the report of the Committee, for raising the standard of general education. The preliminary sciences could, he held, be better taught in the university than in the school.—Dr. H. R. DEAN urged the taking of this opportunity to raise the standard of general education of the medical student, especially in regard to literature and mathematics. Often students were none the worse for having had no science at school.—Sir GILBERT BARLING asked that the decision on the education in the preliminary sciences should stand over until the special subcommittee which the Committee intended to appoint to consider the subject had reported, and in this he was supported by Dr. R. CATON, Sir JOHN MOORE, Professor A. THOMSON, and others.—Dr. MACKAY was willing to accept Mr. Waring's amendment, but preferred for it to be submitted to the vote. On being put to the Council the amendment was decisively rejected.

At the resumed discussion on Friday Sir GILBERT BARLING moved that a decision as to the preliminary sciences should be deferred until the subcommittee had reported.—This was seconded by Professor A. THOMSON.—Dr. MACKAY opposed the amendment.—The PRESIDENT reminded the Council of the previous debate, when it was felt that all the subjects of the medical curriculum should be correlated.

The amendment was negatived by 17 to 15.

Dr. DEAN moved that the minimum standard of general education required by the Council for registration as a student should be raised to a standard equal to that demanded in other learned professions, the change to take place previously to or concurrently with the requirement of a preliminary examination in science before registration. If no such raising of the standard were attempted at this opportunity it would be assumed that the Council was satisfied with the present standard.—Dr. RUSSELL WELLS seconded, remarking that his fear was that if a preliminary scientific examination were instituted which could be taken at the schools at 17 years of age, that would be a temptation to the schoolmaster to get the student through the lowest maximum of general education as early as possible, so that a longer time could be given to scientific education. This would be bad for medical education in general.

Dr. MACKAY said the preliminary examination in all the universities was of the highest standard. The only bodies which accepted a lower or minimum standard were the Conjoint Boards in the three countries. He would bring the matter of the minimum standard of general education before his Committee at the earliest opportunity.—Dr. DEAN'S motion was agreed to.

Dr. MAGENNIS moved an addition to Par. (C) of the recommendation—namely, that the student should be interviewed by the University or Licensing Body concerned as to his physical and mental suitability to join the medical profession.—Dr. J. A. ADAMS seconded, but the rider was defeated.

Dr. MACKAY moved a recommendation that in awarding examination marks regard be paid also to the student's record in the course of his studies in the particular subject.—Sir GILBERT BARLING favoured this. Something of the kind was tried in Birmingham, but there was an objection by the examiners, who regarded it as a withdrawal of some of their power in the examination. It was therefore abandoned.—Dr. MCVAIL remarked that some students understood how to "play up to" the professors, who might, unconsciously, show partiality, but there was not much risk from this and other possibilities.—Professor HARVEY LITTLEJOHN supported the recommendation, and it was adopted.

Dr. MACKAY moved a recommendation that Curricula Subcommittees be set up to consider and report as to the value of the various subjects in relation to the medical curriculum, and especially to clinical teaching.—It was agreed that the Education Committee should take the initiative in making these appointments; that the nucleus of each of these subcommittees be formed from among the members of the branch councils, and that then each subcommittee should coöpt, from without, certain specialists in the subjects under consideration. It was left to the Education Committee to see that each subcommittee was of reasonable size and fully representative. It was resolved that the recommendation regarding the examination in preliminary sciences should take effect on Jan. 1st, 1923.

The Executive Committee recommended the recognition by the Council of the Higher Dental Diploma of the Higher Faculty of Physicians and Surgeons of Glasgow for registration in the Dentists' Register as an additional qualification. It was agreed that the initials indicating this should be H.D.D.

The Public Health Diploma.

In presenting the report of the Public Health Committee, Sir JOHN MOORE signified the Committee's satisfaction that the Lords of the Admiralty had recognised the importance of naval officers obtaining a Diploma in Public Health by granting study-leave for this purpose.—Dr. COEY BIGGER, in seconding the resolution to consider and revise the D.P.H. regulations, said most of the medical men who took this diploma did so in order to qualify themselves for the Public Health Service, and it was essential that the duties in any department of that work should be entered upon with the best possible knowledge. The present curriculum required that much time should be devoted to chemistry and bacteriology. Much of the chemistry was afterwards forgotten, because it had not included analytical work, and, indeed, the equipment for such was not supplied. Similarly with regard to bacteriology. No M.O.H. acted as bacteriologist to the body employing him, yet it was absolutely necessary he should have a sound knowledge of bacteriology. His aim was to bring the standard of knowledge required more in conformity with the needs in this expanded public health work.

Sir GEORGE NEWMAN supported the resolution, remarking that there had also been a development in the relationship of the M.O.H. to clinical matters, particularly infectious and contagious diseases. The profound changes seemed to call for a new type of M.O.H.

The recommendation was approved.

Sir JOHN MOORE moved the Report of the Irish Branch Council, which stated that a communication had been sent to the Irish Public Health Council asking that steps be taken to utilise Poor-law institutions in Ireland for the instruction of medical students in practical midwifery, under expert supervision.—The PRESIDENT said a like request had been sent to the English and Scottish authorities.

SHIP-BORNE PLAGUE.

THE annual report of the chief medical officer of the Ministry of Health for 1919-20 contains, amongst other reports which we have already noticed, a valuable contribution on the subject of ship-borne plague, by Dr. R. J. Reece, one of the senior medical officers of the Ministry. It comprises a summary of the more important facts relating to the circumstances associated with the occurrence of the disease on board ships arriving at the ports of England and Wales during the last 25 years by one whose complete experience enables him to write authoritatively on the subject. During recent years the number of plague-infected vessels coming into British ports has increased. This, in Dr. Reece's view, may be attributed to conditions brought about by the war, which have resulted in large quantities of food-stuffs and other cargoes being stored for long periods awaiting transport at certain ports abroad, such as Bombay, Alexandria, and the South American ports. Before shipment this merchandise is liable to become infested with rats, with the result that the number of these rodents found on board cargo-carrying vessels has materially increased since the signing of the armistice. When a vessel arrives at one of our ports and declares that she is an "infected" or "suspected" vessel, or when it is known that she has come from a plague-infected port, prompt measures are taken at the port of arrival to prevent the introduction of the disease into the country.

Difficulties of Recognition of Plague.

A study of the many examples given by Dr. Reece shows that this preliminary information is not always forthcoming, and consequently the task of a port medical officer of health is at times far from easy. In the first place, it has to be remembered that the number of merchant vessels carrying a ship's surgeon is relatively few and that the recognition of plague by an untrained observer is often difficult. The bubonic type is generally correctly diagnosed because it is widely known that this form is accompanied by glandular swellings. In the septicæmic and pneumonic forms the virulence of the disease and the rapidity of the fatal issue often mask the diagnosis. On board ship these forms may be confused with malignant malaria, influenza, or typhus fever, and thus it not infrequently happens that those on board a plague-infected vessel have no idea of the true nature of the malady. In the second place, a vessel coming from a port where no plague is known to exist may yet have plague-infected rats on board. It appears probable that plague may exist undiscovered among rats on board a vessel for many months. In the case of the s.s. *Highland Prince*, for example, the infection was probably taken on board the vessel in June and did not become manifest until the first days of October.

Method of Infection on Board Ship.

It is common knowledge that the modern ship is generally built in water-tight compartments, at any rate below the water-line, often with no direct communication between holds; to get from one hold to another a rat would have to come to the upper decks. Plague infection may therefore be entirely limited to one hold, rats therein dying of the disease whilst those in other holds remain healthy. In such circumstances should all the rats and rat fleas die, there will be no spread of infection to man when the holds are opened for the purpose of discharging the cargo. On the other hand, fleas leave the body of a rat when it dies, and it is therefore a dangerous procedure for a man to enter the hold of a ship in which rats have died. Again, much depends upon the cargo carried; when a ship is empty or when the cargo does not afford food for rats they will make their way, if possible, to the places on the ship where the food of the crew is stored or prepared. Thus the first human case on board a vessel is often some member of the crew whose duties take him into the food store. The storekeeper or the saloon steward who carries the food from the galley to the saloon is specially liable to infection, and the steward may in turn infect the captain and other officers upon whom he attends. It is therefore of importance that all food stores on board ship should be rendered rat-proof. It appears probable that rats often gain access to ships by being carried on board with the cargo. They have sometimes been found in bales, bags, barrels, and crates containing a variety of different goods, such as grain, fruit, and vegetables, particularly when a cargo intended for a vessel has been left undisturbed for some time in dock warehouses. Before shipment such cargo should be carefully looked over. Above all, every means should be employed to prevent rats at a plague-infected port gaining access to a vessel which is to carry grain or other cargo to a distant country. It is probable that this precaution has not always been observed in the past.

Transport of Rats.

As indicating the extent to which rats are conveyed from one country to another through the agency of shipping Dr. Reece's remarks on the change of the species of rats found at the English ports are very interesting. A hundred and fifty years ago the rat of this country was the *Mus rattus*, the black rat, or old English rat. When the brown rat, *Mus decumanus*, came to Britain it practically exterminated the old English rat, and a few years ago it was hardly possible to obtain a specimen of the black rat. In recent years the rat population of this country has undergone a further change owing to the reintroduction from abroad of the black rat and the appearance of a third species, also black, known as the *Mus alexandrinus*. From returns received by the Ministry of Health it would appear that these two rats are increasing in number at certain ports. The number of brown rats destroyed at London and Cardiff far exceeds the number of black rats, whereas at Liverpool and Hull the two black rats predominate. The presence among ships' rats of the species most prone to acquire, carry, and transmit the infection of plague is somewhat disquieting and demonstrates the desirability of destroying these rodents at the point at which this process may most effectively be carried out—namely, on board ship immediately after discharge of the cargo.

Plague Prevention at Liverpool.

The annual report for 1919 of the medical officer of health to the Port Sanitary Authority of Liverpool contains, in the section devoted to rats and plague, tables showing that over 20,000 rats were caught on ships and quays by the authority's rat-catchers during the year, in addition to 50,000 disposed of by various shipping firms employing their own means of deratisation. An example of the new duties imposed on port sanitary authorities by recent legislation is the Rats and Mice Destruction Act, 1919, which applies to a vessel as though it were land; the master of a vessel is deemed to be the occupier thereof, thus becoming responsible for taking reasonable and practical steps to rid his property of rats and mice. The world-wide distribution of plague was maintained during the year, but one case only was landed at Liverpool out of a ship which had sailed from Bombay. In the port of Liverpool 310 rats were examined bacteriologically, and 20 of this number were found to be plague-infected; most of the latter could be traced to a single vessel. The following precautions were adopted. The vessel was breasted 6 feet off the quay, rat-guards were placed on all mooring-ropes, gangways were whitewashed and hoisted when not in use; extra labour was engaged, the cargo was searched for rats, the vessel also searched before, during, and after discharge of cargo; the names and addresses of the crew were obtained and the men visited; any dock labourer or carpenter absent from work on account of sickness was also visited; rat-catchers were kept continually at work on ship and quays; the matchboard lining and flooring of the lazaret were stripped and burnt, and the apartment thoroughly sprayed with kerosene; dead rats when found were immediately disinfected, and the whole vessel when empty was subjected to complete and simultaneous disinfection.

TUBERCULOSIS.

The Neglect of Tuberculosis Notification.

WHY is notification of tuberculosis so often neglected? In the report for 1919 of the central tuberculosis officer for the Lancashire County Council, the administrative problems of tuberculosis are discussed and prominence is given to the now familiar complaint—practitioners do not notify many of their cases at all, or they defer notification till a few weeks or months before the patient's death. The point of view of the tuberculosis officer is given on page 14 of the Lancashire report:—

As in previous years, a special inquiry was made for the information of the Lancashire Insurance Committee in every case applying for sanatorium benefit in the third stage of the disease, in order to ascertain, if possible, why the patient did not apply until the disease was so far advanced. The reasons, both for the late notifications and applications for sanatorium benefit in the late stages of the disease, remain the same as previously reported, and are as follows: (1) The unwillingness of insured persons to report themselves to their doctors. (2) The inability of the doctor to make a diagnosis through lack of time for a proper examination. (3) The omission on the part of the doctor to utilise the services of the tuberculosis officer as a consultant.

But why are insured persons unwilling to report themselves to their doctors, and why do practitioners omit to utilise the services of the T.O. as a consultant? An answer to the second question may, perhaps, be found on page 34 of the Lancashire report where the T.O.'s rôle as consultant is extended, and both he and his staff are supposed to "exercise general supervision over domiciliary treatment." Is it not conceivable that the practitioner, who would gladly accept the aid of a consultation, might resent the exercise of general supervision over his domiciliary treatment? It would also be interesting to learn whether practitioners as a body find it helpful to call into consultation a T.O. whose chief qualifications for the appointment he holds are a six months' residence at some chest hospital and the Diploma of Public Health. It is probable that many a practitioner, confronted with an early case of tuberculosis, reasons as follows. My first duty is to my patient. Will the advantages of notification outweigh its disadvantages? If I notify him I may let loose on him a flood of unsympathetic officials, who will pry into every corner of his home, turn his family upside down in search of "contacts," and, if the clamour for compulsory segregation leads to its legislative endorsement, whisk him off to some isolation hospital to die among strangers. As an inadequate offset to these drawbacks notification may secure my patient's admission to a sanatorium after a long spell of waiting, and certain doles and pittances in his home. On the other hand, by diagnosing bronchitis or some other non-tuberculous illness I can still secure sickness benefit for my patient, whom I hope to cure by a few months' home treatment, and whom I hope to save the terrible stigma attaching to tuberculosis. This pious hope is, no doubt, sometimes fulfilled, but in all too many cases it robs the patient of the benefits of early expert treatment. Human nature being what it is, we cannot expect early notification of every case till the benefits to the patient are so increased that they substantially outweigh the disadvantages. In Denmark this elementary principle has long been grasped, and in the draft of the new tuberculosis law in Norway provisions are made for substantially compensating the consumptive for his disabilities.

Tuberculosis in Belfast.

From Dr. A. Trimble's annual report as chief medical officer of the city of Belfast, on which our Irish correspondent commented last week, it appears that 2529 new patients were examined at the institutes and 19,816 old patients attended in the year ending March 31st, 1920. Of the new cases, 1820 were found to be tuberculous, 508 non-tuberculous, and 352 "suspect." Of the specific forms of tuberculosis, pulmonary cases numbered 698 males and 798 females; glandular, 17 males and 105 females; osseous, 48 males and 48 females; abdominal, 16 males and 11 females; and other forms, 12 males and 7 females. The number of patients under treatment on March 31st was: Institute, 1575; domiciliary, 3470; sanatorium, 254. The number treated during the year was 7251, and included those patients who had left the city, or who did not need further treatment, or who had ceased to attend for further treatment, or who had died. The age-incidence showed that the female rate showed two maxima—viz., the quinquennium 10–14 and the quinquennium 20–24; while the male rate showed a maximum in the quinquennium 20–24. The female rate showed an excess over the male rate at the earlier ages, while the male rate showed an excess in the period 35–39 and at later ages. Some instructive information is given regarding the occupations of the patients. Amongst the highest figures were the following: discharged soldiers 338, general servants 14, clerks 28, engineers, 35, spinners 42, stitchers 72, weavers 49, winders 21, doffers 21, labourers 208, school-boys 194, school-girls 229. Of the 1820 patients found to be suffering from tuberculosis during the year 758, or over 41 per cent., admitted personal association with tuberculosis amongst other members of their own families. In many cases, as the result of interinfection, it appeared that whole families had been wiped out by the disease. There was a marked contrast in the incidence of the disease in the different wards of the city—ranging from 8·2 per 1000 in Smithfield Ward, 7·8 per 1000 in Court Ward, 7·1 per 100 in St. George's Ward to 3·2 per 1000 in Clifton Ward, 2·5 per 1000 in Windsor Ward, and 2·4 per 1000 in Cromac Ward. In the service of the institute nine visiting nurses are employed and the number of visits paid during the year was 53,017. During the year the house and grounds of Graymount were taken over by the corporation for the treatment of osseous and other forms of tuberculosis in children. A fully equipped X ray apparatus and an apparatus for electrical treatment have been provided during the year, and a dental department has been established.

As regards the results of treatment, the following figures are provided:—Domiciliary patients: greatly improved, 385; improved, 1455; in statu quo, 1183; worse, 203. Institute patients: Greatly improved, 143; improved, 484; in statu quo, 282; worse, 8. Sanatorium patients: Greatly improved, 41; improved, 74; in statu quo, 43; worse, 32. Dr. Trimble rightly emphasises the extreme importance of preventive measures in the crusade against tuberculosis. "We shall never," he says, "grapple successfully with the problem of tuberculosis until we cease to turn our attention exclusively to the treatment of the individual. ..... If the same energy was displayed in the prevention of tuberculosis and in educating the people how to avoid it, as is now shown in attempts to cure it in the individual, I have no hesitation in asserting that a marked acceleration in the diminution of the disease would be seen in the life-time of the present generation."

A Handbook for Tuberculosis Workers.

Dr. Noel Bardswell has just published[1] a short and compact handbook for tuberculosis workers, which should also prove of great value to some types of patients. Within the limits of 66 small pages of large type he crams much useful information, and his balanced judgment on every aspect of the disease should be a useful antidote to the extreme views of cranks and fanatics. It is not always a thankful task to discuss a subject from the common-sense, matter-of-fact point of view; readers with a hankering for the bizarre are apt to find the plain truth rather drab. A few years ago a lecturer on tuberculosis in the Eastern Counties eclipsed the Fat Boy in "Pickwick" in his craving to make the flesh of his audience creep. He declared that every time he entered a consumptive's house he ran as great risks as if he were visiting a case of small-pox. Timid gentry of this class do an infinite amount of mischief, and Dr. Bardswell's book is an excellent corrective to many common misconceptions and exaggerations. His book also includes a useful list of the chief centres at which voluntary workers can obtain some training.

[1] Handbook for Tuberculosis Workers. By Noel Bardswell, M.V.O., M.D., F.R.C.P., Principal Assistant Medical Officer, Public Health Department, L.C.C.; Medical Adviser, London Insurance Committee. London: John Bale, Sons, and Danielsson. 1920. 1s. 6d.

CONTROL OF VENEREAL DISEASE.

The Staffing of Veneral Clinics.

ALTHOUGH only eight pages have been allotted to the subject of venereal diseases in the annual report of the chief medical officer to the Ministry of Health, yet this short account touches upon matters of the greatest interest. Dr. F. J. H. Coutts, who is responsible for the work both of the tuberculosis and V.D. sections of the Medical Department, in dealing with the causes of administrative ineffectiveness, lays stress upon the unsatisfactory plan of appointing a roster of the whole medical staff to take charge of the treatment centres attached to hospitals. "Frequently," he says, "it is found that these officers have no particular interest in the treatment of venereal disease, and undertake the work merely as a duty to be performed perfunctorily." We hope that such a system will soon lapse, for it is inimical to the welfare of the patients and it tends to engender a lack of system and enthusiasm amongst the junior members of the venereal clinic staff. If a similar plan were suggested for any other special department of a hospital, such as the ophthalmic or the aural, its dangerous absurdity would at once be realised.

Hutments as Clinics.

An interesting diagram in the same report shows how a 60 × 30 ft. military hut may be converted into a V.D. clinic. While the general plan is commendable it is noteworthy that no provision appears to be made for the examination of female patients or for their daily treatment by irrigation or otherwise. The arrangements for men have been made on the assumption that the patients will irrigate themselves. Having regard to prevailing divergencies of opinion, an alternative plan might have been given showing how the hut could be adapted for irrigation administered by someone other than the patient. We see no provision for patients to rest after receiving an intravenous injection. The general waiting-room is unsuitable for such a purpose. The position of the sanitary arrangements on either side of the main entrance also seems unfortunate. No systematic description of the hut is given in the report, a fact which makes comment difficult and possibly unfair. No mention is made either in terms of "working hours" or "strength of staff" as to the number of patients who can be accommodated or treated in such a building. Army huts may or may not be suitable for adaptation as treatment centres, and the Ministry of Health might be encouraged to give all the information at their disposal for the guidance of municipal authorities and medical men inexperienced in V.D. administrative work.

A Statement by the S.P.V.D.

The Society for the Prevention of Venereal Disease has circulated widely in the press a statement in regard to immediate self-disinfection in the hope that the public will demand an inquiry by an impartial and competent body. The statement is signed by Lord Willoughby de Broke and several eminent medical men, who definitely affirm and are prepared to bring conclusive evidence as to:—

(1) The efficacy of immediate self-disinfection in the male as a prevention against venereal infection and the possibility of almost eradicating these diseases by this means.

(2) The biased nature of the composition and report of Lord Astor's Interdepartmental Committee, the high authority of which the Minister of Health strongly emphasised in his speech at the deputation.

(3) The gross inaccuracy of the statistics supplied by the War Office.

(4) The failure of the Government, the War Office, the Admiralty, and the Ministry of Health, to organise public education on this subject or carry out any thorough scheme for testing the efficiency of immediate self-disinfection as a preventive of venereal disease either during the war, or since the Armistice.

(5) The increase in venereal disease since the Armistice, and its necessary effect on innocent women and children, by increasing sterility, miscarriages, and the production of diseased children.

(6) The very large amount of popular support for a campaign of education in the principles and practice of the prevention of infection by venereal disease by means of immediate self-disinfection that is given by organised labour, the medical profession, and practically all those who have had personal experience in the prevention of venereal disease by such methods.

(7) The great financial burden that venereal disease is to the nation.

The signatories also call attention to the very large number of young persons of both sexes (but especially young men) who persist in voluntary exposure to risk, and to the fact emphasised by the late Sir William Osler and many others that infection may be conveyed to the innocent by a cup, glass, bath, towel, razor, and many things in common use.

The All-America Conference.

An "Institute on Venereal Diseases," arranged by the U.S. Public Health Service at Washington and attended by health officers, private practitioners, and others, preceded the six-day session of the All-America Conference on Venereal Diseases held this week and attended by hundreds of experts from all parts of the Western hemisphere. The object of the Institute was to afford to medical men, "educators, psychologists, sociologists, and others," the opportunity of pursuing a ten-day course in relation to both the medical and sociological aspects of venereal disease. The following subjects, amongst others, were on the programme: Diagnosis and Treatment of Venereal Disease, Diagnosis of the Mental Condition of Delinquent Women, Protective Work for Girls, Heredity and Eugenics, Public Education in Venereal Disease, Sex Psychology. We believe that the value of such intensive courses lies not so much in the actual information acquired by those attending as in the formation of an atmosphere in which latent interests are discovered and the flagging energy of the solitary worker stimulated and developed. The interest of American municipal authorities in the 444 largest cities was further enlisted by a survey in which the cities were marked according to the vigour of their fight against venereal disease, being awarded so many points for various medical measures, so many for preventive educational work, so many for restrictive laws and their enforcement, and so on, with a total possible maximum of 1000. The cities were then divided into four classes according to their population, and each class was graded according to its aggregate mark. While the results of this survey were not made public, it aroused the competitive spirit of the authorities, inciting those of cities that stand low in the list to improve their standing and of those that stand high to fresh efforts to maintain their rank, in preparation for a second survey, the results of which are to be published.

Euphemisms in the American Press.

An enormous amount of propaganda work has been done in relation to the Conference on Venereal Diseases sitting this week in Washington, and the press has been approached with the object of arousing interest in the whole subject. Editors have received statements of the aims of the Conference and a short précis dealing with the campaign against venereal disease. The unfortunate suggestion has, however, been made that, instead of clearly stating that the diseases to be considered and attacked are syphilis and gonorrhœa, reference should be made to them as the "great red plague" and the "lesser red plague" respectively. We regard the use of such nomenclature as a fundamental mistake. It is, in our opinion, a survival of the false modesty which obsessed the civilised world in the past, and from which we are only now but slowly being delivered. The originators of these euphemisms are moved by a sense of policy "to save the blushes of the thin-skinned." We regard as desirable less hushing and more blushing. The ignorant, whose age justifies a knowledge of the sociological and medical facts about syphilis and gonorrhœa, should be informed concerning them without any verbal disguise. If those of tender years are likely to become inquisitive concerning the use of the terms "syphilis" and "gonorrhœa," the inconvenient curiosity of the young will certainly be aroused by the sensationalism which attaches to red plagues, whether large or small.

Salvarsan Substitutes in America.

At the suggestion of Surgeon-General H. S. Cumming, the All-America Conference is giving some time to a discussion on the use of various arsenic "substitutes" for salvarsan. To standardise the drug and to prevent the sale of worthless substitutes the name "arsphenamin" was adopted by the Treasury Department, and

licences for its manufacture granted only to persons who complied with certain conditions considered essential for safety and health. Service medical officers have been repeatedly cautioned against the use of preparations not belonging to the arsphenamin group, and were directed to use only the arsphenamin produced by licensed firms. Some of the unlicensed preparations on the market were found to contain no arsenic or other curative agent at all; and those that are still being made result from efforts to circumvent the rigid tests required by the Public Health Service. No one who does not comply with these regulations may call his product "arsphenamin"; but there seems to be no law to prevent the manufacture of substitutes bearing other names and claiming to obtain the same results. "We do not consider that any other products have been shown to be sufficiently reliable," says Dr. Cumming. "But the value of arsphenamin is well established."

A SCHEME OF MEDICAL SERVICE FOR SCOTLAND.[1]

THE Scottish Consultative Council on Medical and Allied Services have presented an Interim Report with the above title to the Scottish Board of Health. The Report has been adopted by the Council unanimously, and is signed with their authority by the chairman, Sir DONALD MACALISTER, and the vice-chairman, Dr. NORMAN WALKER.

The following summary of recommendations indicates the scope and tenour of the Report:—

1. Unification of all local health authorities.
2. A complete medical service to be within the reach of every member of the community, organised by the State, but not of necessity provided at public expense or carried out by State officials or practitioners.
3. Organisation to be based on the family as the normal unit and the family doctor as the normal medical attendant. All health agencies to be mediated to the individual by the family doctor.
4. The expansion of the present insurance system to provide for the whole population of "National Insurance" grade (including all dependants), those entitled to medical service under the Poor-law, and for the treatment of discharged soldiers.
5. Special services to be available to others above "Insurance" grade for which that section of the community is unable to make adequate provision.
6. The provision of small "recovery homes" or "hospices" for cases of ordinary illness where the patient cannot be properly treated at home and where no "cottage hospital" or nursing home is available.
7. The provision of "invalid homes" for chronic invalids. Poor-law hospitals might be used for the purpose.
8. The family doctor to be provided with all necessary supplementary advice and assistance. All serious surgical cases to be sent to hospital for operation. For acute medical and other cases, "district consultants," selected by local members of the profession, to be appointed. Ambulant cases to receive advice at hospitals or consultation clinics. Coöperation among general practitioners for consultation and treatment to be encouraged.
9. Facilities to be provided to all practitioners and to all classes for reference to clinical laboratories, and to experts in special branches of medical science.
10. The recommendations regarding hospitals are reserved pending the report of a joint committee considering the question.
11. Convalescent homes should be increased in number, and include "preventive" or "rest" homes.
12. The Queen Victoria Jubilee Nurses' Organisation to be utilised as a suitable basis for a national system of skilled district nursing.
13. The provision of fully trained health visitors in populous areas.
14. The provision of an adequate maternity service as soon as a sufficient number of trained midwives is available. A necessary adjunct would be the provision of sufficient beds in each district for difficult cases or where the home conditions are unsuitable.
15. Adequate facilities to be provided for dentistry. A consulting dental surgeon to be attached to each laboratory clinic.
16. The pharmaceutical arrangements of the scheme, it is recommended, should follow the provisions of Section 15 (5) of the National Insurance Act, 1911.

The Report should be studied as a whole. It is a brief and clearly written advocacy of a practical scheme, while the proposals, for example, for the provision of laboratories and clinics, and for the institution of different types of convalescent homes, do not lend themselves to summary. We shall have occasion to deal further with the document, which is noticed this week in a leading article.

[1] Scottish Board of Health: Interim Report of the Consultative Council on Medical and Allied Services. London: Eyre and Spottiswoode. Edinburgh: His Majesty's Stationery Office. 2*d*.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Canadian Medical Association.

THE fifty-second annual meeting of the Canadian Medical Association is to be held in Halifax, N.S., on July 5th, 6th, 7th, and 8th, 1921, under the presidency of Dr. Murdoch Chisholm, of that city. Last year the Association, after a lapse of annual meetings for several years owing to the war, was convened in Vancouver; the meeting was last held in Halifax in 1905. At that time a movement was set on foot to organise and establish a journal. Last year, at Vancouver, a new constitution and by-laws were adopted, and the next meeting will be the first held under this new constitution. The branch associations now provided for consist of the provincial medical societies, and there is also provision for affiliated societies—i.e., any Federal medical or scientific body. The list of officers remains as before—namely, a president, a vice-president for each provincial society, a general secretary, a treasurer, and a council.

McGill University: the Five Million Dollar Campaign.

McGill University has announced a registration of students for 1920–21 which is approximately equal to that of 1919–20. The total is more than 2485. The Faculty of Medicine shows the largest registration—namely, 795. The Faculty of Science comes second, with 694. The eyes of all universities in Canada and the United States are said to be watching with the keenest interest the University's public campaign to obtain $5,000,000. To promote this campaign a series of pamphlets have been issued, and newspapers and periodicals are giving the campaign unusual publicity. This is the third time in its history that the University has appealed to the public for donations and subscriptions, for in the past McGill has always fared well at the hands of numerous and influential friends. In 1881 $33,000 was raised by public subscription; again, in 1911, the second campaign netted $1,500,000. The third, or present campaign, aims at $5,000,000, and the outlook is most hopeful. During war time many members of the various staffs and a large proportion of students were away, and the strictest economy had to be practised. There was no money for new buildings, staffs were depleted, scientific apparatus and equipment became totally inadequate. The close of the war soon raised the registration in Arts from 389 in 1918 to 932 in 1919; in medicine from 526 to 724; in applied science from 242 to 643. Additional professors and assistants had to be provided, and increased salaries were urgently needed. There were about 500 on the staff of McGill, the average salary being around $3000 per annum. It is proposed now to spend $3,250,000 on salaries and increases in salaries; $1,250,000 on apparatus and equipment; and $500,000 on the maintenance of existing buildings and laboratories. A new department of biochemistry has recently been created with Professor A. B. Macallum, formerly of the University of Toronto, and latterly chairman of the Federal Research Committee, as its head. A new building is in contemplation to house pathology, medical jurisprudence, hygiene, and psychiatry for the medical faculty at a cost of $460,000 which will require an endowment of $150,000. Many other buildings are required, including a Convocation Hall; and unless $5,000,000 can be obtained the University will not be able to keep pace with other similar institutions on the Continent of America.

Canadian National Committee for Mental Hygiene.

When the second annual meeting of the above organisation met in Vancouver a short time ago, Dr. Charles F. Martin (Montreal) was re-elected President, Dr. Charles K. Clarke (Toronto) Medical Director, and Dr. C. M. Hincks (Toronto) Secretary. Dr. Clarke, in presenting a report of the society for 1919, spoke of the preliminary work which had to be done to educate the public as to the immense number of mental defectives in Canadian schools. Surveys had been made in New Brunswick and Nova Scotia, and the committee had exercised considerable influence in Quebec and Ontario,

as well as assisting materially the Department of Immigration.

Lack of Nurses in Western Canada.

At a recent Conference of the Dominion Council of Health in Ottawa a deplorable lack of nurses was revealed in all the provinces of the Dominion, particularly in Western Canada. A resolution was passed suggesting to various philanthropic organisations that they undertake to provide scholarships for young women found to be eligible but unable financially to take up training. It was also pointed out that some hospitals might have to close their doors because of the lack of nursing service.

King of the Belgians Honours Canadian Doctor.

The King of the Belgians has written to the Hon. Dr. Henri S. Beland, former Postmaster-General for Canada, expressing his great appreciation of the services of this distinguished Canadian with the Belgian forces at Liége and in the hospital of Ste. Elizabeth at Antwerp at the commencement of the war, and bestowing upon him the title of Knight of the Most Distinguished Order of the Crown of Belgium, "for generous, brave, and devoted services given." It will be remembered that Dr. Beland was subsequently a prisoner of war for three years in Germany.

Nov. 25th.

ROUMANIA.

(FROM OUR OWN CORRESPONDENT.)

The Price of Drugs in Roumania.

SINCE the first day of the war the price of drugs has continually risen, and although the Board of Health has issued several orders on the subject complaints of infringements of the law are continually made. The druggists state in their defence that owing to bad postal communication they are obliged to travel abroad in order to be purchase supplies. In peace time they simply wired to Vienna, Berlin, or Budapest for drugs, and within two or three days they had them. There is now no parcel post; a letter to Germany is sometimes seven weeks or more on the way; goods can only be imported by a person who accompanies the goods-wagon. Freight and duties are very expensive; even if the druggist can buy cheaply, a poor man who is not a member of some sick club cannot afford to pay the fancy prices of drugs. For instance, a bottle containing 200 g. of a simple decoction of senega root costs 16 lei (in Hungary 48 crowns), a day's wage of a labourer. 10 g. of aspirin distributed in 1 g. powders costs 18 lei, the price of 2½ kilo of meat; before the war the same quantity of aspirin was equivalent in cost to half a kilo of meat. Salvarsan, owing to the spread of syphilis consequent upon the war, stands at an exorbitant price. Neosalvarsan is imported from Germany, and the present rate of exchange favours Roumania, our leu standing higher than the German mark; despite this fact, the 0·6 g. of neosalvarsan, which costs 8 marks in Germany, is sold for 60 lei (about 48*s.*) in Roumania. Several druggists have already been fined for these high prices, but until more normal traffic conditions prevail they cannot sell at lower figures. English medicines, which were very highly esteemed before the war, can no longer be seen here, again because of the rate of exchange. Prohibitive prices force us to use inferior preparations, and even these are very costly. Several enterprising druggists have attempted to manufacture drugs, but the lack of good machinery, raw materials, and skilled staff resulted in production of inferior, unreliable, or useless medicines. The Board of Health in Bucharest is urging the necessity of importation of foreign drugs; only in this way can improvement in health conditions be obtained.

Imprisonment for a Revolutionary Doctor.

A docteresse has recently been heavily sentenced at Budapest for having attended, in a professional capacity, at executions by hanging of counter-revolutionaries sentenced by the Red Tribunals. The accused claimed that she had been forced to undertake the duty, but her statements were denied by witnesses, who testified to her callous behaviour towards the victims, and the High Court of Justice sentenced her to five years' imprisonment with hard labour.

Proposed Notification of Abortion in Nagyvarad.

The Municipal Board of Sanitation of the town of Nagyvarad intends to issue an order which makes it obligatory to notify cases of miscarriage. At a meeting of doctors convened to discuss the matter, the majority held that compulsory notification of abortion would only have one advantage—namely, that prosecution in cases of criminal abortion would thereby be facilitated, although malpractices could not be suppressed in this manner. Women would be driven into the hands of unauthorised midwives, and the number of deaths would thus be increased. The difficulty of ensuring secrecy in the working of a system of notification, and the serious injustice which might arise therefrom, occasioned the rejection of the plan.

Hungarian Ministry of Public Health.

Mons. August Benard, the Minister in charge of this newly-formed department of the Hungarian Government, published on Nov. 5th his first report, in which appear details of his formation of a "school of genius." This original scheme consists of a search through institutions for the care of orphan and abandoned children, in the hope of finding boys and girls of exceptional talent. For these a convent school and a middle school have been provided, and deserving cases are then enabled by State aid to complete their education in Vienna, Berlin, Paris, or London. Amongst the children recently helped in this way a sculptor and a violinist have already appeared. Mons. Benard has said that should only 20 children be gathered every year in this way this must be regarded as a very good result. The Ministry also reorganised the work of protection of infants and women, and voluntary efforts were coördinated. In villages the giving out of infants to nurse is to be controlled by committees consisting of the parish teacher, clergymen, public notary, and the physician. Voluntary workers are to be added later. Since Mons. Benard became Minister of Public Welfare the mortality in institutions for children has fallen to one-third of its former figure. He has also brought down the price of drugs by 30 per cent. Morphine has become 50 per cent. cheaper, and this drug is now manufactured in the country. A very successful State-aided surgical dressing factory was established. The provision of food for the hospitals was taken in hand, with the result that plenty of food is now provided for all hospital patients. In Budapest alone during last winter there was sufficient food for 30,000 in-patients. This year the number will be increased to 50,000–60,000.

A Curious Source of Lead-poisoning.

Dr. Adolf Erdös, a practitioner from Oradea-Mare, Transylvania, reports a curious case of lead-poisoning. The patient, a municipal clerk, 56 years of age, complained of colicky pains occurring almost daily and always at the same time of day—i.e., between 4 and 5 o'clock in the afternoon. On examination it proved to be a case of chronic lead-poisoning. As the man had never worked with lead the cause of plumbism was difficult to discover. Finally, Dr. Erdös found that the man had suffered for about 15 years from prolapse of the anus, and being poor could not afford toilet papers, contenting himself with newspaper. Of the latter he used large quantities, owing to the size of the prolapse and to his habit of scrupulous cleanliness. In the last six or seven years printing has been done with inferior black lead colours; bearing in mind the absorbent power of the mucous membrane of the rectum, it was not difficult to connect the plumbism with this excessive use of newspapers.

Bucharest, Nov. 15th.

LITERARY INTELLIGENCE.—The publishing firm of Georg Thieme, of Leipzig, announces the appearance this month of a revised fourth edition of Döderlein and Krönig's "Operative Gynæcology."

URBAN VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1920.

IN the accompanying table will be found summarised statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases notified in the table was equal to an annual rate of 15·8 per 1000 of the population, estimated at 4,358,309 persons; in the three preceding months the rates had been 6·6, 11·3, and 16·3 per 1000. Among the metropolitan boroughs the lowest rates from these diseases were recorded in Chelsea, the City of Westminster, St. Marylebone, Hampstead, Holborn, and the City of London; and the highest in Hammersmith, Fulham, Finsbury, Bethnal Green, Stepney, Poplar, and Bermondsey. The prevalence of scarlet fever was slightly less than in the preceding month; this disease was proportionally most prevalent in Hammersmith, Bethnal Green, Stepney, Poplar, and Bermondsey. The Metropolitan Asylums Hospitals contained 5508 scarlet fever patients at the end of the month, against 2251, 3683, and 5117 at the end of the three preceding months; the weekly admissions averaged 780, against 335, 603, and 873 in the three preceding months. Diphtheria was slightly more prevalent than in the preceding month; the greatest proportional prevalence of this disease was recorded in Fulham, Islington, Finsbury, Shoreditch, Bethnal Green, and Poplar. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1388, 1773, and 2284 at the end of the three preceding months, further rose to 2604 at the end of November; the weekly admissions averaged 360, against 173, 266, and 364 in the three preceding months. The prevalence of enteric fever was about equal to that in the three preceding months; of the 23 cases notified during the four weeks ended Nov. 27th, 4 belonged to Hackney, 3 to Paddington, 3 to Islington, and 3 to Camberwell. There were 16 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 17, 14, and 19 at the end of the three preceding months; the weekly admissions averaged 3, against 3, 3, and 4 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, St. Marylebone, Bethnal Green, Stepney, Southwark, Battersea, and Deptford. The 32 cases of puerperal fever included 5 in Lambeth, 4 in Fulham, 4 in Poplar, 3 in Hammersmith, and 3 in Wandsworth. The 6 cases of cerebro-spinal meningitis belonged respectively to Finsbury, Stepney, Lambeth, Wandsworth, Camberwell, and Lewisham; and the 2 cases of poliomyelitis to Hammersmith and Finsbury.

The mortality statistics in the table relate to the deaths of civilians actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ended Nov. 27th the deaths of 4542 London residents were registered, equal to an annual rate of 13·6 per 1000; in the three preceding months the rates had been 9·3, 9·9, and 10·5 per 1000. The death-rates ranged from 10·1 in Hampstead, 10·7 in Lewisham, 10·9 in Paddington, 11·3 in the City of London, and 11·4 in Woolwich, to 15·9 in Chelsea and in Finsbury, 16·7 in Southwark, 17·1 in Shoreditch, 17·3 in Poplar, and 18·1 in Holborn. The 4542 deaths from all causes included 233 which were referred to the principal infectious diseases; of these, 10 resulted from measles, 24 from scarlet fever, 92 from diphtheria, 9 from whooping-cough, 3 from enteric fever, and 95 from diarrhœa and enteritis among children under 2 years of age. Among the metropolitan boroughs the lowest death-rates from these diseases were recorded in Hammersmith, the City of Westminster, Hampstead, St. Pancras, Stoke Newington, Holborn, and Greenwich; and the highest in Islington, Finsbury, Shoreditch, Bethnal Green, Southwark, and Bermondsey. The 10 deaths from measles were only one-fifth of the average number in the corresponding period of the five preceding years; of these, 2 belonged to Shoreditch, 2 to Bethnal Green, and 2 to Poplar. The 24 fatal cases of scarlet fever exceeded the average by 10; of these, 2 belonged to each of the boroughs of Hammersmith, Islington, Shoreditch, Stepney, Southwark, Wandsworth, and Camberwell. The 92 deaths from diphtheria exceeded the average number by 25; the greatest proportional mortality from this disease occurred in Islington, Finsbury, Bethnal Green, Poplar, Bermondsey, and Lewisham. The 9 fatal cases of whooping-cough were one-third of the average; of these, 2 belonged to Finsbury. Three deaths from enteric fever were regis-

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1920.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1919.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.								Deaths from all causes.	Death-rate per 1000 living.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,358,309	—	3424	1547	—	23	—	32	236	6	2	5270	15·8	—	10	24	92	9	3	95	233	0·7	4542	13·6
West Districts:																								
Paddington	143,938	—	79	46	—	3	—	1	10	—	—	139	12·6	—	1	—	3	—	—	2	6	0·5	120	10·9
Kensington	157,886	—	90	29	—	1	—	—	6	—	—	126	10·4	—	—	—	1	—	—	10	11	0·9	191	15·8
Hammersmith	130,981	—	158	54	—	—	—	3	6	—	1	222	22·1	—	—	2	1	—	—	—	3	0·3	119	11·8
Fulham	152,543	—	146	77	—	—	—	4	9	—	—	236	20·2	—	—	1	4	—	—	4	9	0·8	155	13·2
Chelsea	60,573	—	15	21	—	—	—	—	2	—	—	38	8·2	—	—	—	—	—	—	2	2	0·4	74	15·9
City of Westminst'r	127,533	—	35	18	—	—	—	1	8	—	—	62	6·3	—	—	—	1	—	—	1	2	0·2	134	13·7
North Districts:																								
St. Marylebone	97,953	—	52	11	—	1	—	1	7	—	—	72	9·6	—	—	—	1	—	—	3	4	0·5	96	12·8
Hampstead	88,012	—	47	14	—	—	—	—	2	—	—	63	9·3	—	1	1	—	—	—	—	2	0·3	68	10·1
St. Pancras	219,434	—	117	76	—	1	—	1	9	—	—	204	12·1	—	—	1	1	—	—	1	3	0·2	225	13·4
Islington	323,034	—	158	181	—	3	—	1	15	—	—	358	14·4	—	—	2	21	1	—	7	31	1·3	354	14·3
Stoke Newington	50,954	—	46	18	—	—	—	—	2	—	—	66	16·9	—	—	—	1	—	—	—	1	0·3	55	14·1
Hackney	216,736	—	194	89	—	4	—	—	9	—	—	296	17·8	—	1	1	1	—	—	8	11	0·7	202	12·2
Central Districts:																								
Holborn	38,156	—	10	14	—	—	—	—	1	—	—	25	8·5	—	—	—	—	—	—	1	1	0·3	53	18·1
Finsbury	75,291	—	58	54	—	1	—	—	1	1	1	116	20·1	—	—	—	4	2	—	1	7	1·2	92	15·9
City of London	13,893	—	3	1	—	—	—	—	—	—	—	4	3·8	—	—	—	—	—	—	1	1	0·9	12	11·3
East Districts:																								
Shoreditch	98,134	—	66	46	—	—	—	1	6	—	—	119	15·8	—	2	2	2	—	—	5	11	1·5	129	17·1
Bethnal Green	110,085	—	197	51	—	1	—	—	16	—	—	265	31·4	—	—	1	4	1	—	4	10	1·2	126	14·9
Stepney	232,506	—	381	74	—	—	—	2	17	1	—	475	26·6	—	2	2	3	—	—	6	13	0·7	275	15·4
Poplar	153,644	—	265	73	—	1	—	4	7	—	—	350	29·7	—	2	1	6	—	1	2	12	1·0	204	17·3
South Districts:																								
Southwark	179,971	—	122	41	—	—	—	—	19	—	—	182	13·2	—	—	2	5	1	—	7	15	1·1	230	16·7
Bermondsey	124,239	—	141	43	—	1	—	1	6	—	—	192	20·1	—	—	1	7	1	—	4	13	1·4	135	14·2
Lambeth	282,322	—	134	79	—	1	—	5	12	1	—	232	10·7	—	—	1	6	1	1	5	14	0·6	304	14·0
Battersea	159,316	—	99	65	—	1	—	2	12	—	—	180	14·7	—	1	1	4	—	—	5	11	0·9	167	13·7
Wandsworth	333,693	—	234	93	—	1	—	3	13	1	—	345	13·5	—	—	2	5	1	—	4	12	0·5	309	12·1
Camberwell	273,802	—	237	101	—	3	—	—	19	1	—	361	17·2	—	—	2	2	—	1	5	10	0·5	249	11·9
Deptford	111,205	—	86	37	—	—	—	2	9	—	—	134	15·7	—	—	—	2	—	—	4	6	0·7	118	13·8
Greenwich	98,484	—	76	38	—	—	—	—	4	—	—	118	15·6	—	—	1	—	—	—	—	1	0·1	89	11·8
Lewisham	127,754	—	100	42	—	—	—	—	3	1	—	146	11·3	—	—	—	5	—	—	1	6	0·5	138	10·7
Woolwich	136,237	—	78	60	—	—	—	—	6	—	—	144	13·8	—	—	—	2	1	—	2	5	0·5	119	11·4
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

tered during the month, against an average of 7. The 95 fatal cases of infantile diarrhœa showed a decline of 16 from the average; the greatest proportional mortality from this disease occurred in Kensington, Hackney, the City of London, Shoreditch, Bethnal Green, and Southwark. In conclusion, it may be stated that the aggregate mortality in London during November from these principal infectious diseases was 15·6 per cent. below the average in the corresponding period of the five preceding years.

(Week ended Dec. 4th, 1920.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at nearly 18 million persons, the annual rate of mortality, which had been 13·4, 12·8, and 13·5 in the three preceding weeks, fell to 13·2 per 1000. In London, with a population of nearly 4½ million persons, the death-rate was 13·1, or 1·0 per 1000 below that recorded in the previous week, while among the remaining towns the rates ranged from 7·4 in Edmonton and in Southend-on-Sea, 7·8 in Norwich, and 7·9 in Ilford, to 19·4 in Gateshead, 20·7 in Tynemouth, and 22·1 in Middlesbrough. The principal epidemic diseases caused 204 deaths, which corresponded to an annual rate of 0·6 per 1000, and comprised 94 from infantile diarrhœa, 59 from diphtheria, 18 from measles, 16 from whooping-cough, 15 from scarlet fever, and 2 from enteric fever. The mortality from these diseases showed no marked excess in any of the large towns. There were 5438 cases of scarlet fever and 2655 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 5575 and 2626 respectively at the end of the previous week. The causes of 27 of the 4494 deaths in the 96 towns were uncertified, of which 4 were registered in Birmingham, and 2 each in London, Hull, Darlington, South Shields, and Tynemouth.

Scottish Towns.—In the 16 largest Scottish towns, with an aggregate population estimated at nearly 2¼ million persons, the annual rate of mortality, which had been 14·3, 13·6, and 14·3 in the three preceding weeks, fell to 13·5 per 1000. The 298 deaths in Glasgow corresponded to an annual rate of 14·0 per 1000, and included 6 from diphtheria, 3 from infantile diarrhœa, and 1 each from enteric fever and scarlet fever. The 73 deaths in Edinburgh were equal to a rate of 11·2 per 1000; no fatal case of any of the principal infectious diseases was registered during the week.

Irish Towns.—The 116 deaths in Dublin corresponded to an annual rate of 14·6, or 1·1 per 1000 below that recorded in the previous week, and included 4 from infantile diarrhœa, 3 from diphtheria, and 1 from whooping-cough. The 105 deaths in Belfast were equal to a rate of 13·3 per 1000, and included 6 from infantile diarrhœa, 3 from whooping-cough, 2 from diphtheria, and 1 from measles.

The Services.

ARMY MEDICAL SERVICE.

Temp. Major-Gen. Sir R. James (Major, R.A.M.C., T.F.) relinquishes his temporary commission.

Col. F. Kiddle retires on retired pay.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. P. J. Probyn retires on retired pay.

Major A. C. Duffey is placed on the half-pay list on account of ill-health.

Major H. E. J. A. Howley retires on retired pay and is granted the rank of Lieutenant-Colonel.

Captains to be acting Majors: C. R. Dudgeon and H. G. Winter.

Capt. B. H. C. Lea-Wilson is restored to the establishment.

Capt. J. D. Duncan (5th R. Highrs., T.F.) to be temporary Captain.

The undermentioned Lieutenants (temporary Captains) to be Captains: J. M. Morrison and J. S. B. Forbes.

Officers relinquishing their commissions:—Capt. C. W. Wise; Temp. Capt. W. F. Abbott (granted the rank of Major). Temp. Captains retaining the rank of Captain: T. H. R. Crowle, J. McCulloch, and J. G. Garson.

SPECIAL RESERVE OF OFFICERS.

Captains relinquishing their commissions and retaining the rank of Captain: A. B. McA. Lang, C. K. Mowll, D. G. Duff, D. Finlayson, T. Fleming, F. W. A. Watt, J. H. Brown, C. S. Baxter, D. C. Lamont, D. Fergusson, W. Scotland, A. M. Davidson, A. S. Goudie, A. G. F. McArthur, W. Napier, A. K. I. Jones, J. W. H. Grice, F. L. Whincup, R. Andrew, and G. Winter.

INDIAN MEDICAL SERVICE.

The King has approved the retirement of Lieut.-Cols. R. H. Castor and J. Davidson, and Major V. B. Nesfield.

UNIVERSITY OF EDINBURGH: CAMERON PRIZE IN THERAPEUTICS.—Sir Robert Jones, who last July was awarded the Cameron prize in therapeutics, will give an address in Edinburgh University early in January. He has placed the amount of the emolument constituting the prize at the disposal of the University authorities for the purpose of founding an annual prize in therapeutics.

Correspondence.

"Audi alteram partem."

THE POLICY OF THE LONDON PANEL COMMITTEE.

To the Editor of THE LANCET.

SIR,—The criticisms that have appeared in the medical press of the action of the London Panel Committee in refusing to take part in the election of the Insurance Acts Committee of the British Medical Association, indicate that the Committee's motive for this course has been misunderstood. In view of the approaching elections of Panel Committees in most districts (although not in London, since an election took place there last summer) it appears desirable that the position of the London Panel Committee should be made clear, so that individual practitioners who share the views of the majority of London men may support candidates of like opinions to represent them on their Panel Committees.

The London policy is quite simple. It being agreed that the conditions of service and terms of remuneration under the Insurance Acts can only be satisfactorily arranged by the method of collective bargaining, it is contended that it is right that the body to whom is entrusted the duty of conducting such bargaining should consist entirely of persons directly elected by, and solely responsible to, those on whose behalf they are negotiating. The action taken by the London Panel Committee in determining not to be represented on the Insurance Acts Committee was not decided upon without due consideration. The justification for the action is not that any exception is taken to the personnel of the Insurance Acts Committee but to its constitution. The London Panel Committee are of opinion that the body negotiating with the Government on behalf of the panel practitioners should be elected by the panel profession, and exception is taken to the fact that six members of the Insurance Acts Committee are elected by the representative meeting, and these six, together with the four *ex-officio* members of the British Medical Association Committees, in reality constitute the Insurance Acts Committee. These ten may coöpt the representatives of local medical and panel committees, and whilst in actual practice they have always done so, yet the fact remains that the coöption is permissive. But even if we admit that a compulsory coöption might be better, there still remains the fact that ten members do not directly represent, nor are they directly elected by, panel practitioners through their panel committees. The view of the London Panel Committee is that the negotiating body should be the executive of, and elected by, the Conference of Local Medical and Panel Committees; that each member of the negotiating body should derive his authority from that Conference. The inclusion on a negotiating body of persons, however competent in themselves, who are not directly elected is liable to lessen the cofidence of those who are to be bound by the conclusions arrived at, and thereby to lead to the risk of a repudiation of the terms agreed upon. The London Panel Committee are also of opinion that the cost of such conference and of its executive should be borne by practitioners through their panel committees. It is felt that the expense should in no part be borne by any outside association or union, and that under no circumstances should money, so allocated, be used for any other purpose than that of safeguarding the interests of the panel profession.

It has been represented that this policy might be construed as ungrateful or hostile to the British Medical Association. The London Panel Committee believe that a majority of their members are loyal members of the Association, who regard it as in the best interests of the Association that it should be free to voice the views of all classes of the profession, and should not be open to the criticism that it is unevenly dominated by the interests of Insurance practitioners or of any other section of its members. The London Panel Committee

hope that this view, which they regard as of great importance to the future of Insurance practice, will be given the prominence it deserves at the forthcoming election of Panel Committees, and that candidates will be selected and supported who are in agreement with this policy.

We are, Sir, yours faithfully,

H. J. CARDALE, *Chairman.*
W. COODE ADAMS, *Vice-Chairman.*
LAURISTON E. SHAW, *Treasurer.*
R. DUNSTAN, E. A. GREGG, *Members of Committee.*
R. J. FARMAN, *Secretary.*

Staple House, Chancery-lane, W.C., Dec. 6th, 1920.

VITALISM AND SCHOLASTICISM.

To the Editor of THE LANCET.

SIR,—As the author of various works, I am well aware that the occupation of kicking against the pricks is pleasant and soothing as compared with that of answering one's reviewers, yet I will ask you for the favour of a few lines of space to allude to one point in the notice of my book which appeared in your columns some weeks ago (the delay is, of course, due to the distance between Canada and London). Your reviewer seems to think that "authority" actually counts for something in scholastic philosophy as it does in scholastic theology, a totally different subject. I had not supposed that this view could possibly be held to-day by anyone in any way conversant with the subject. Of course, the fact is that it neither does count nor did it ever count, as shown by the three authoritative quotations which I gave. They might easily have been made up to three or four times the number had I thought that there was the slightest need for doing so. At any rate, he may take it from me that writers on this subject are not "told" by anyone to take any particular view nor otherwise influenced towards that view by anything but the facts before them and the scientific world generally. That scholastic philosophy does take and always has taken the attitude towards vitalism which many biologists now take only shows that the writers on the former subject are not wholly out of touch with scientific ideas.

I am, Sir, yours faithfully,

BERTRAM C. A. WINDLE.

St. Michael's College, Toronto, Ontario, Nov. 22nd, 1920.

TREATMENT OF DIPHTHERIA CARRIERS.

To the Editor of THE LANCET.

SIR,—I congratulate Dr. A. Reith Fraser and Dr. A. G. B. Duncan upon the happy results of their treatment of diphtheria carriers with detoxicated Klebs-Löffler vaccine, described in THE LANCET of Nov. 13th, but one point raised by them invites comment—namely, the question of differentiating between "positive throats" and "carriers." In my article on the same subject[1] I did not discriminate between them as no such distinction seemed necessary. Can it be said that a patient with a positive throat is not a carrier, or that a carrier has not a positive throat? The authors apply the term positive throat alone to a three-months' persistence in hospital convalescence, reserving the term carrier for the same condition when it lasts for, it may be, years. Now in the general community the number of carriers of *B. diphtheriæ* is admittedly large. Amongst, say, 100 patients admitted to hospital notified as diphtheria there will always be a percentage not suffering from clinical diphtheria. What makes up this percentage? Again, of those suffering from clinical diphtheria, how many were carriers before the onset of the developed disease to which, from the very presence of the carrier state, they are at any time liable? For how long may the *B. diphtheriæ* have been present previous to its discovery and to the patient's removal to hospital? In other words, how long may such individuals have been carriers, and who amongst them may develop a positive throat? May not the positive throat arise only in the case of a previous carrier or a potential carrier? Such a surmise appears reasonable.

It is known that the bacilli in a positive throat may disappear spontaneously or may be got rid of by energetic local antiseptic treatment, while in other cases the organisms remain indefinitely. Can it be denied that many unknown carriers have been cured by residence in hospital? The stimulation of their immunity-mechanisms by the disease itself, by the antitoxin, or by any other treatment applied, may have sufficed to determine the extinction of their faucial parasites. How many have carried unsuspectingly for years and then ceased to carry unknown to themselves and all concerned? Who knows how many influences may be inimical to the perpetuation of the *B. diphtheriæ*? Surely there is no such dictum as "once a carrier, always a carrier"! Without a complete knowledge of the previous throat history (bacteriological) of every admission, answers to such questions will not be forthcoming. May it not in all cases be a matter of inherent predisposition? In any case how can a distinction be drawn between the self-same condition arising in the course of or convalescence from a disease and as manifested before its potential appearance? The presence of the *B. diphtheriæ* being the prime necessity, arguments centred round its length of residence do not help. The better part is to realise the value of vaccine therapy in the condition under review and to apply forthwith remedial measures of known efficiency.

In conclusion, I submit that the terms "positive throat" and "carrier" are synonymous, but to prevent confusion and unnecessary quibbling, it would be well if some more comprehensive term could be coined which would designate all such cases in future.

I am, Sir, yours faithfully,

JAMES LAW BROWNLIE.

Glasgow Corporation Laboratory, Nov. 22nd, 1920.

[1] THE LANCET, 1920, i., 706.

CŒLIAC DISEASE.

To the Editor of THE LANCET.

SIR,—I am naturally interested in the paper by Dr. R. Miller and others (THE LANCET, Oct. 30th), and Dr. Miller's subsequent letter (Dec. 4th), which deals with the subject of cœliac disease, as for some years I have worked upon the subject, and have also written of it.[1] "It would seem that in some children, whether on account of some peculiarity in constitution or in the original illness, there results a widespread destruction of nearly all digestive power. Yet not from any gross lesion, for there is apparently none." It is welcome to find Dr. Miller's independent judgment arriving at the conclusion that the cœliac condition itself is not a gross lesion. He, indeed, goes further in calling it "functional," but the essential point to me is that he agrees, with myself and others, that the disease may get well as mysteriously as it appears. Every student of the subject must recognise this point in the history, and also every practical physician must realise that it is not only the quality but the quantity of food that proves a difficulty in the treatment.

That Dr. Miller should have overlooked the paper alluded to by Dr. Armstrong I can well understand, owing to its title, but that having studied it he should have passed it over is a most searching criticism of the presentation of the clinical side of the subject for which I was responsible. A bitter tonic is most wholesome, and I feel all the better for it, the more so because from his letter I see that he is slowly arriving at the point from which that paper started, and has put clearly what I put confusedly. For "teaching" purposes his subdivisions are useful, but I am not convinced we have got far enough to allow of such a classification.

In conclusion I would point out that Dr. Armstrong's contribution to the morbid anatomy of this most remarkable affection is one of the very few English attempts on the subject.

I am, Sir, yours faithfully,

Devonshire-place, W., Dec. 3rd, 1920. F. JOHN POYNTON.

[1] Brit. Med. Jour., July 19th, 1919.

THE NEED FOR CONVALESCENT HOMES.

To the Editor of THE LANCET.

SIR,—In your news columns there appears this week an account of the Birmingham Hospital Saturday Fund annual collection in which it is pointed out that the Fund has been adversely criticised in letters to the public press for having spent more than 50 per cent. of its total collections on the upkeep of convalescent homes. Is this a matter for praise or blame? The value of convalescent homes in relieving hospital beds of acute cases, as well as in affording patients who have passed the acute stage a better chance of progress towards health, is now being recognised by the medical profession and by the public. Sir Napier Burnett, in his survey of the hospital situation throughout England and Wales, appended to the joint appeal for voluntary hospitals by the Red Cross Society and the Order of St. John, goes further than general opinion has gone. Recommendation 6 reads: "Convalescent hospitals.—To give every encouragement for the establishment of convalescent hospitals in the country for the dual purpose of pre-hospital and post-hospital care."

The idea of establishing these institutions for the treatment of early cases in order to render hospitals less necessary should be given trial, and the Birmingham Hospital Saturday Fund can claim to be congratulated upon their efforts to put their annual collection to fruitful use. I am, Sir, yours faithfully,

Dec. 4th, 1920. BRUMMAGEM.

*** The Report and Appeal to which our correspondent refers appeared in THE LANCET of May 22nd.—ED. L.

PRESCRIBING AND DISPENSING.

To the Editor of THE LANCET.

SIR,—That the compulsory separation of prescribing and dispensing advocated by the Council of the Pharmaceutical Society would provide a solution of many problems can hardly be doubted. There is no question that the thorough training in pharmacy, dispensing, and allied subjects which chemists are required to undergo renders them better qualified than medical men to compound medicines; in particular, a pharmaceutical training is required to detect and obviate the less evident forms of chemical and physical incompatibility. The handing over of a prescription to a chemist for dispensing provides a check upon dosage and renders available a duplicate set of records of the drugs administered in any case, although the accidental substitution of, say, arsenic for bismuth would be as likely, or unlikely, to occur in a chemist's shop as in a well-regulated dispensary, and the employment by a medical man of a qualified pharmacist as dispenser provides most of the advantages of the separate system. That prescribing should be restricted to those who are legally qualified to practise medicine is even more obvious. Such a restriction would afford to the public a much-needed safeguard, and it would at the same time raise the professional status of the pharmacist. There are, however, certain disadvantages attaching to the restriction of dispensing to chemists and the importance of these must be carefully weighed. When a medical man does his own dispensing the lending of prescriptions to friends and relatives, a dangerous and common practice, is prevented, and there is certainly less risk of patients continuing the use of narcotic drugs, those with cumulative action, and so forth, when no longer under medical supervision. It has been suggested that doctors should deliver to patients or their representatives copies of all prescriptions which they themselves dispense, but such copies, although useful as records of the treatment given, would open the door to some of the abuses mentioned. Dispensing by chemists sometimes renders more complex the problem of professional secrecy, since the purpose of a prescription given in the treatment of, say, venereal disease, may be obvious. Again, when a medical man is called up at night to see an urgent case, should he be allowed to supply the necessary medicine or is time to be lost in rousing a chemist as well? In connexion with practice in rural districts there are at present, apparently, insuperable obstacles to the complete separation of prescribing and dispensing. I heard a few days ago of a medical man who, contemplating commencing practice in a place of some 3000 inhabitants, where there is at present one doctor, and not wishing to dispense, found a drug store but no qualified chemist in the neighbourhood, and I have in mind another area in the same county where about a dozen villages are visited by a practitioner who resides in the centre of the district, in the whole of which there is no chemist. These are not sparsely populated areas; in such the difficulty is, of course, much greater. Important as these objections are, and although it would seem to be impossible at present to apply the process of separation uniformly over the whole country, on taking a wide view of the subject, one is forced to the conclusion that the proposal compulsorily to separate the functions of prescribing and dispensing is sound in principle. It is possible that with the coöperation of some of the large numbers of ex-Service students of pharmacy now qualifying it may be found possible to provide a more adequate pharmaceutical service in the country districts, but it is probable that many areas which now have a doctor only could not support a chemist in addition. Failing a marked increase in the number of chemists in these districts exceptional treatment might be applied to those cases where there is no chemist within a stated radius. Piecemeal legislation is to be deprecated; it would be manifestly unfair, for example, to limit the prescribing of chemists and leave herbalists unfettered. Many inter-related questions require treatment as a whole, and in a broad spirit.—I am, Sir, yours faithfully,

Nov. 29th, 1920. X.

Obituary.

SIR FREDERICK TAYLOR, BT., M.D., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO GUY'S HOSPITAL, AND LATE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

WE deeply regret to announce the death of Sir Frederick Taylor, which occurred at the age of 73, after a long illness on Thursday, Dec. 2nd. Alike by official position, by clinical work, by his frequent appointment to examinerships, and by the 11 editions of his famous text-book on medicine, his name has been familiar to all medical students of the last half century.

Frederick Taylor was born in 1847, the son of a general practitioner in Kennington, and was educated at Epsom College and at Guy's Hospital, where he took the diploma of M.R.C.S., and in the same year, 1868, graduated in medicine at the University of London, winning the scholarships in midwifery and forensic medicine. Two years later he proceeded to the M.D. degree, and in 1872 took the M.R.C.P. Lond. previous to his appointment as assistant to Guy's Hospital, where he had already held the necessary junior appointments. He was elected full physician to the hospital in 1885, while he also held positions on the staffs of the Evelina Hospital for Sick Children, the National Hospital for Diseases of the Heart, and the Seamen's Hospital. All this great clinical and personal experience enabled him to write out of the fullness of personal knowledge the text-book which has been the familiar friend of successive generations of medical students up to the appearance of its eleventh edition less than two years ago. These editions have appeared since 1890 at regular intervals and the work has been steadily kept up to date by collaborators. What this entailed upon the original writer and those who assisted him may be gathered by comparing the first issue with the tenth, in which a complete rearrangement was made of the grouping of the infectious diseases, while diseases of the glands with internal secretions were separated from diseases of the blood and blood-forming organs, and all the new pulmonary conditions associated alike with pneumonia and tuberculosis were given their orderly prominence. The predominant features of Taylor's text-book are,

from the beginning and in all its stages, first, the sense of balance which caused him to give the fullest consideration to the commoner diseases, leaving the rarities to be briefly treated, though with adequate proportion; and, secondly, its clearness. In so far as clearness leads to easy reading it is apt to lead to easy forgetting, but the real salients of disease stick out from "Taylor's Practice of Medicine" and refuse to be forgotten, and to this day the work remains a valuable manual for students. Since its issue most one-man text-books have become transformed into systems which represent the combined work of a number of contributors, and it is now recognised to be impossible for any one man to cover adequately and equally the whole subject of internal medicine. Probably Sir Frederick Taylor will be the last author to attempt it, and no follower can expect to meet with like success.

It was inevitable that with this equipment he should obtain as many examinerships as he desired, especially as Taylor was a man of notable courtesy and fairness, not so formidable as to prevent the candidate from doing himself justice, but too shrewd to allow the unprepared man to slip through the net. He was an examiner in medicine at different times for the Universities of Durham, Birmingham, Cambridge, Belfast, and his own University of London, which he also represented for many years on the General Medical Council, and where he was a Member of the Senate. He examined also in medicine for the entrance examination of the Services, and for the final diploma of the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England. Neither a very convincing nor of late a very frequent speaker at the meetings of learned societies, he was in due turn president of the Clinical Society, of the Medical Section of the Royal Society of Medicine, and later of that Society itself. At the Royal College of Physicians of London he delivered the Lumleian lectures on Disorders of the Spleen in 1904, and the Harveian oration on Medicine and Research in 1907, and in the second year of the war he was elected President of the College in succession to Sir Thomas Barlow.

This is only a brief record of a strenuous and valuable career, the termination of which at the age of 73 may still be considered untimely, for he was in the full tide of his activities when the illness struck him from which he never recovered. There is no doubt that the war affected him bitterly; his private sorrows and his public responsibilities were grievously heavy. He secured a place in the history of contemporary medicine by his single-minded devotion to his calling, and this is his best epitaph.

THE LATE DR. G. B. COLLET.—Golding Bird Collet, who died on Nov. 28th at the age of 68, was a member of a well-known Worthing medical family. He was a son of the late Dr. H. J. Collet, and a brother of the late Mr. Augustus H. Collet, both of whom also practised at Worthing, all three taking an important share in furthering its prosperity. Dr. G. B. Collet studied medicine at the Royal Sussex County Hospital at Brighton, and St. George's Hospital, London. He took the M.R.C.S. in 1874, and L.S.A. and L.R.C.P. in 1877. In 1876 he acted as surgeon to the Peru and Chili Cable Expedition. He retired from practice in 1909, and went to reside at Haslemere.

THE LATE DR. H. B. MURRAY.—The death is recorded of Henry Buchanan Murray, L.A.H. Dub., which took place on Nov. 19th at his residence in Belfast, after an illness extending over several months. Dr. Murray was the second son of Dr. Henry Murray, formerly of College-square East, Belfast, and studied at Belfast, Dublin, and Edinburgh. He settled in Belfast, and for many years was one of the dispensary medical officers of the city. He was closely identified with the Ancient Order of Foresters, and was a man of great geniality of character, and deservedly popular with all classes. He is survived by a sister, a son, and two daughters, with whom much sympathy is felt in their bereavement.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society will be held at 4.30 P.M., on Dec. 21st, at St. John's Hospital, Leicester-square, W.C. Clinical cases will be shown by Drs. J. L. Bunch, Dennis Vinrace, S. R. Kapoor, W. K. Sibley, H. C. Samuel, and W. Griffith.

Parliamentary Intelligence.

HOUSE OF LORDS.

MONDAY, NOV. 29TH.

New Houses and the Smoke Nuisance.

Lord NEWTON asked what steps had been taken by the Minister of Health to ensure consideration being given to the recommendations contained in the interim report of the Departmental Committee on smoke and noxious vapours abatement by local authorities or others carrying out housing schemes with the assistance of a Government subsidy. He said that the Committee, of which he was chairman, made recommendations which would not have cost any extra money, but would have abated the smoke nuisance and saved the consumption of raw fuel. But the new buildings were being constructed on the old extravagant system of heating. The recommendations of the Committee had not even been sent to the housing authorities. If the Committee were to go on they ought to have some assurance that their advice would be brought to the notice of the authorities concerned, and that, if approved by the Minister, steps would be taken to carry it into effect.

Viscount SANDHURST on behalf of the Government assured the noble lord that the work done by him and his colleagues on the Committee was greatly appreciated by the Ministry of Health, and the Ministry sincerely hoped that the work would be continued. Arrangements had been made by the Ministry for the erection of sample houses to illustrate methods of heating without coal. Two large housing schemes had been carried out with central hot-water pipes installed in the houses—one of 2700 houses in Manchester, and the other of 700 houses at Salisbury. Special instructions had been given by the Ministry to the Housing Commissioners to bear in mind the recommendations of the Departmental Committee, and a special memorandum bearing directly upon them had been issued, or would shortly be issued, to local authorities.

HOUSE OF COMMONS.

MINISTRY OF HEALTH BILL.

Standing Committee A of the House of Commons resumed consideration of the Ministry of Health (Miscellaneous Provisions) Bill on Wednesday, Dec. 1st. Sir WILLIAM PEARCE presided. The discussion on Clause 11, which gives powers to county councils to provide and maintain hospitals and ambulances, was continued.

Dr. ADDISON (Minister of Health) gave an assurance to Mr. T. Thomson that incipient mental disorder was certainly an illness or disease covered by the Clause.

Mr. ORMSBY-GORE moved an amendment to provide that where a county council and a board of guardians failed to come to an agreement for the handing over of the Poor-law hospitals to the county council, the latter should be able to maintain patients in the Poor-law hospitals.—Dr. ADDISON pointed out that the amendment would go back on a decision reached by the Committee on the previous day, and therefore he could not accept it.—Sir RYLAND ADKINS opposed the amendment, which he said would be an embarrassment to county councils.—Captain COOTE supported the amendment as being the best way of using the accommodation in certain cases.—Mr. LORDEN said it was clear that they would not get an amicable agreement with boards of guardians, who had said that they would not part with these institutions. Some means ought to be provided whereby these institutions could be used at the earliest possible moment.—Dr. ADDISON promised to accept an amendment later on which, in the absence of an agreement being reached and where necessity was shown, would enable action to be taken by the case being brought to the notice of the Ministry of Health.—Earl WINTERTON said it seemed to him that the local Poor-law authorities were going to stick their toes in very considerably. Many of them were indignant at what they regarded as attacks made on them, and they were going to refuse to hand over hospitals or enter into agreements. If they did not adopt this amendment they were closing the door to the healing of some of the sick who would otherwise be healed.—On a division the amendment was negatived by 16 votes to 7.

Voluntary Hospitals.

Colonel LESLIE WILSON (Parliamentary Secretary to the Ministry of Shipping) moved to leave out the paragraph in the Clause giving power to county councils to contribute to voluntary hospitals or similar institutions within their area. He said he did so in view of the decision arrived at on the previous day.—Captain COOTE asked for an assurance that during the interval before the Committee of Inquiry reported steps would be taken to prevent any voluntary hospital closing wholly or in part. It was quite improper in

his opinion that either the King Edward's Hospital Fund or the National Relief Fund should be used for the assistance of voluntary hospitals, because the former was a reserve which ought not to be touched except in the last extremity for the London hospitals, and the National Relief Fund was not created for assisting hospitals.—Earl WINTERTON thought it was not quite fair to ask the Minister for an assurance of that kind in view of the fact that they had not yet even settled the relationship of the State to the hospitals. It was a matter for the whole Cabinet and the House to decide, and it might mean millions of money.—Mr. THOMSON protested against the Government whittling down the measure. Some of them had considerable hopes of the somewhat puny measure the Goverment had introduced, but they were giving first one thing away and then another.—Sir R. ADKINS said that many of those who were concerned in local government were increasingly convinced the more they went into the problem of the correlation of health services that voluntary hospitals such as those which had flourished in most of the English county towns were necessary to be retained as voluntary hospitals, as the proper crown and coping-stone of medical services in their area. From the point of view of a local administrator he thanked the Government for dropping this particular Subsection.—Mr. R. RICHARDSON said he protested against the dropping of the Subsection as one who had had a good deal of experience with regard to voluntary hospitals. He feared it was necessary to have aid either from the rates or from the State. If something was not done the medical service would not be there at all. There were thousands of people waiting to get inside hospitals with diseases that required immediate attention, but they could not have it for want of means.—Mr. BETTERTON was convinced that the Minister was adopting the only possible course in setting up this impartial committee which was to report quickly.—Mr. SWAN regarded the omission of the Subsection as a retrograde step.—On a division the Subsection was deleted by 17 votes to 10.

Lieutenant-Colonel FREMANTLE moved an amendment to the paragraph dealing with the establishment and maintenance of an ambulance service, making it quite certain that the ambulances would be available for serving a hospital rather than a county area. The amendment was agreed to.

Homes for Mental Cases.

Mr. THOMSON moved an additional paragraph to Section 1 of the Clause giving county councils the power to establish and maintain homes or hostels for the care and treatment of persons suffering from mental disorder which is incipient in character and of recent origin, but not being persons who have been certified as lunatics under the Lunacy Acts, 1890 to 1911, or in respect of whom an order has been made under the Mental Deficiency Act, 1913. He said if the Bill went through as it was they were making altogether inadequate provision for these cases. Ex-service men would not be able to pay for maintenance in private homes.—Colonel WILSON said he could not accept the amendment. The Ministry already had powers to provide for these special cases. Shell-shock soldiers were all under the care of the Ministry of Pensions.—On a division the amendment was negatived by 20 votes to 10.

Hospital Accommodation.

Lieutenant-Colonel FREMANTLE moved the insertion of a new paragraph to enable the Minister of Health if agreement could not be reached between a county council and the Poor-law authority, and if there was a deficiency of hospital accommodation in the county, to make an order for the transfer of the Poor-law hospital to the county council, provided that such order should be provisional only, and should be of no effect until confirmed by Parliament. He said the Bill made a very small contribution to the extraordinary demand there was at the present time for hospital accommodation. The Minister might occasionally find it necessary or advisable to force the hands of the guardians in the matter.—Colonel WILSON said the Government considered the amendment entirely reasonable and were prepared to accept it.—Mr. ORMSBY-GORE said he would oppose the amendment at this and subsequent stages. They were given to understand on Second Reading and later on that this was to be a voluntary arrangement by agreement between the county council and the board of guardians. Poor-law authorities would view this amendment with indignation. County councils were being put in an overwhelmingly strong position. The guardians would have the threat hanging over them that their best institutions, whether they liked it or not, were to be taken from them with a shadowy safeguard about the order having no effect until confirmed by Parliament.—Sir H. CRAIK said the acceptance of this amendment was going back upon the whole undertaking given to the House and the Committee.—Captain COOTE failed to see how the Goverment were going to get anything out of the Bill at all if they were going to put up the backs of the boards of guardians by this Clause.—Sir R. ADKINS thought that in the vast majority of cases the question of making Poor-law hospitals available for persons who needed treatment would be a matter of agreement between the authorities. It could never work if it resolved itself into an avalanche of Provisional Orders, but all this amounted to was that where there was real disagreement and where the Ministry in the discharge of their responsibilities felt that there was a health problem left unsolved they might bring it before Parliament. He hoped the Committee would accept the amendment.—Mr. GWYNNE said that the amendment bore all the appearance of having been drafted by the Ministry. This was going to be a voluntary arrangement, but now it was a question of blackmail.—On a division the amendment was agreed to by 20 votes to 6.

Mr. ORMSBY-GORE moved to leave out Subsection (2), which gives power, with consent of the Minister, for the councils of two or more counties to combine for the purpose of supplying and maintaining hospitals, and that where any councils so combine they may appoint a joint committee under Section 81 of the Local Government Act, 1888. He thought that this Subsection was going a great deal too far. It was bad enough for the London County Council to take over either by agreement or by compulsory purchase, as it were, the Poor-law infirmaries in the London area, but if they were going to combine with Middlesex and Surrey to do it it was going too far.—Dr. MURRAY thought this was one of the most valuable provisions in the Bill. He had no great regard for the county area. His ideas would centre round what would be the most useful area for a central hospital. They would be interfering with the usefulness of these hospitals unless they were permitted to cater for a fairly extensive area. The greater the area the more expert would be their surgeons and physicians, and in those counties which could not afford to take over an institution for themselves the patients could be provided for in a central institution in a neighbouring county or perhaps two counties away.—Mr. ORMSBY-GORE withdrew his amendment.

Colonel WILSON moved the following new Subsection:—

"The council of a county may, with the approval of the Minister, delegate to any joint hospital board or, in the case of the London County Council, to the managers of the Metropolitan Asylums Board, the management on their behalf of any Poor-law hospital or infirmary acquired by them under this Section."

He explained that the object of this amendment was to allow county councils to delegate the management of any Poor-law institution which they had acquired to some other hospital authority in their own area.—The amendment was agreed to.

Mr. GUEST moved to leave out Subsection (3), which provides that—

Section 132 of the Public Health Act, 1875 (which gives powers to recover the cost of the maintenance in hospital of a person who is not a pauper), shall apply to any patient who has received treatment in a hospital maintained by the council of a county, and the council shall have the same power of recovering expenses as is given to a local authority under that Section.

He believed that this Section if retained would be detrimental to provided hospitals and to voluntary hospitals. It established or re-enacted the principle that those who used these institutions, which were being taken over from the Poor-law authorities, must be either paupers or paying patients. If they enforced this liability and demanded payment they would increase the pressure on the voluntary hospitals, and at the same time would withdraw a good deal of the public support for voluntary institutions.—Earl WINTERTON: That is the whole case for the voluntary hospital.—Mr. GUEST said it was not the case for the voluntary hospital. It was the case, in his opinion, in support of a principle against the dual system into which they had drifted very largely through the efforts of the noble lord and his colleagues. What they should have aimed at and maintained was a national system, with one system of control and one method of support. The only thing left was to see that those who used these provided institutions, having contributed to the rates, were free from any further liability.—Dr. ADDISON said it appeared to him that having done what he could to meet the case of those who championed the cause of the voluntary hospitals all he had done was to create another crop of difficulties for himself. If they could solve this complex and intricate question by any of these lovely formulæ, how nice it would be; but, of course, they could not. They had to deal with facts as they were. They were only applying in the enlarged application of this scheme the same principle, and quite a fair one, which now existed. He was not prepared to accept this proposal.—Mr. RICHARDSON warned the Committee that the voluntary hospitals would be placed in a very dangerous position by this Subsection. Could they expect men to contribute from their wages to voluntary hospitals which were full and overcrowded when they had to go to Poor-law institutions and pay for their treatment there? He had had some experience of work in infectious hospitals, and once they commenced to charge people they would refuse to go to the hospital and disease would be spread broadcast.—Earl WINTERTON: Does the honourable gentleman deny that he and the other Members of the Labour Party have always advocated free hospitals and free

State medical services for this country?—Mr. RICHARDSON: We do not deny it.—Earl WINTERTON: Then do not let honourable Members come here and pose as the friends of the voluntary system. They have always done all they could to get State hospitals.—Mr. RICHARDSON: I am not here to support the voluntary system; I believe it is dead, and that something must take its place. I was only warning the Committee of what would happen under this Clause.—After further discussion, the Committee divided and the amendment to delete the Subsection was negatived by 24 votes to 6.

A new Subsection was agreed to providing for compensation to persons who are deprived of their office or employment, or suffered pecuniary loss by reason of the acquisition of any Poor-law hospital or infirmary, and that transferred officers should not, while they continued in office, be in a worse position as respects their tenure of office, salary, and superannuation allowances than they would have been if they had not been transferred.

On the question that Clause 11 as amended stand part of the Bill, Sir H. CRAIK said the Clause would not tend to benefit hospital management or the great interests of the medical profession. The evils of the Clause had been moderated to some extent, but some of the amendments which had been accepted very materially changed the extent of that moderation. If they were going to have this impartial inquiry which the Minister had promised, why queer the pitch by changing the whole position, and in a way to satisfy nobody? He claimed that the inquiry should be got through as promptly as possible, that a new Bill should be introduced as early as possible next session, and that it should be confined to the one and quite adequate subject of dealing with the whole medical advance of the nation and the health of the nation.—Mr. GWYNNE thought the Minister should recognise that it was only adding to the muddle in which his Department already was if this Clause was passed in its present form. He hoped he would withdraw it and allow the whole question to be dealt with by the Committee of Inquiry.—On a division the Clause as amended was agreed to by 17 votes to 7.

Clause 12 provides that no person shall sell or supply any clinical thermometer unless it has been tested, approved, and marked in accordance with regulations made by the Minister of Health. Unless the Minister directs to the contrary, the Clause does not apply to export from the United Kingdom. The penalty on summary conviction is a fine not exceeding £10.—Dr. ADDISON said that this was one of the clauses he had promised to leave to the Committee. If they opposed it he would drop it, but it was a very good clause, continuing a war practice which the trade wanted continued.—Sir H. CRAIK moved to leave out the exemption applying to thermometers which were exported. If shoddy and untested thermometers were produced in any numbers, and the export of them was perfectly legitimate, a few of them might slip into ordinary use and be sold in this country. For the honour of British trade they should do away with this proviso. On a division the amendment was negatived by 21 votes to 6. Clause 12 was carried on a division by 19 votes to 14.

Resumed Discussion.

On Thursday, Dec. 2nd, Standing Committee A resumed consideration of the Ministry of Health Bill.

After some further clauses of the Bill had been deleted, and others agreed to, Mr. D. M. WILSON (Solicitor-General for Ireland) moved a new clause to provide that the Bill should apply with certain modifications to Ireland.—Earl WINTERTON and Dr. MURRAY protested against the new clause.—Mr. WILSON eventually agreed to withdraw the clause and to bring it forward on the Report stage.

In response to the appeal of Dr. ADDISON a number of new clauses were withdrawn without discussion. The Committee stage of the Bill was then concluded, and it was ordered to be reported to the House.

MONDAY, NOV. 29TH.

Employment of Women and Young Persons.

The adjourned debate on the report stage of the Women, Young Persons, and Children (Employment) Bill was resumed on the new clause proposing that it should be lawful, subject to conditions prescribed by the Secretary of State, at any time between 6 in the morning and 10 in the evening on any day other than Saturday to employ women and young persons in shifts averaging for each shift not more than eight hours per day. After considerable discussion, in which the proposal was strongly criticised by members of all parties as dangerous to the health of those who would be employed on this two-shift system, the clause was read a second time by 148 votes to 66.

Mr. W. T. WILSON moved an amendment to provide that the Secretary of State should make the order only upon the joint application of the employer or employers and the organisation of the workpeople concerned.—Mr. SHORTT (Home Secretary) said he could not accept the amendment, but he would agree to recommit the Bill in order to discuss the matter further.

On the following day, Nov. 30th, the House went into Committee on the new clause, Mr. WHITLEY in the chair.

Mr. SHORTT (Home Secretary) moved an amendment providing that before an order was made in respect of any factory or group of factories for the employment of women and young persons on the two-shift system there should be a joint application from those concerned in that factory or group of factories.

Mr. W. T. WILSON moved an amendment to the Government amendment to leave out the words "any factory or group of factories" and insert the words "in any industry." Mr. Wilson's amendment was rejected on a division by 187 votes to 58, and the Home Secretary's amendment was agreed to.

An amendment moved by Mr. A. DAVIES to secure that the first shift should begin at 7 and not 6 o'clock in the morning was rejected on a division by 148 votes to 68.

The Bill was afterwards read a third time.

TUESDAY, NOV. 30TH.

National Health Insurance Finance.

Dr. ADDISON, in reply to Sir WILLIAM JOYNSON-HICKS, supplied the following statement in round figures for England and Wales as regards National Health Insurance finance for 1919:—

Receipts.

Cash at Bank of England, Jan. 1st, 1919		£802,000
Cash in hands of Approved Societies and Insurance Committees, Jan. 1st, 1919		831,000
Contributions:—		
Employers		7,091,000
Employed persons		9,025,000
Exchequer (including statutory proportion of benefit and sundry grants in aid)		7,230,000
Interest and sundry receipts		2,547,000
Total		£27,526,000

Expenditure.

Medical benefit		£5,743,000
Sanatorium benefit		916,000
Sickness and disablement benefit		6,045,000
Maternity benefit		1,036,000
Administration expenses:—		
Approved Societies	£2,250,000	
Insurance Committees	363,000	3,225,000
Central administration	612,000	
Sums invested:—		
By National Debt Commissioners	£1,110,000	
By Approved Societies	7,811,000	8,921,000
Cash at Bank of England, Dec. 31st, 1919		427,000
Cash in hands of Approved Societies and Insurance Committees, Dec. 31st, 1919		1,213,000
Total		£27,526,000

Metropolitan Asylums Board.

Mr. BLAIR asked the Minister of Health if he would state why the Estimates for salaries and wages in the accounts of the Metropolitan Asylums Board had increased by 174 per cent. (approximate) between 1918-19 and 1920-21, in comparison with increases of 74 per cent. (approximate) in the case of the London County Council, and 100 per cent. (approximate) in the case of the metropolitan police—pay and clothing of the force—during the same years, as set out in the Memorandum on the increase in the amount of local rates per £ of assessable value.—Dr. ADDISON replied: I have communicated with the Metropolitan Asylums Board, and understand that in their case there are the following special reasons for the increase of salaries and wages during the period referred to: (1) General increase in the work of the Asylums Board; (2) increase in number of hospitals in use, several hospitals previously occupied by the War Office having been returned by the Asylums Board; (3) increase in the number of fever patients; (4) adoption of the 48 hour week for the whole staff, with consequent increase of number of persons employed.

WEDNESDAY, DEC. 1ST.

Report on the Health of the Navy.

Commander BELLAIRS asked the First Lord of the Admiralty, in view of the need of economy and the cost of paper and printing, whether he was aware that the Statistical Report of the Health of the Navy in 1914 was only issued on Oct. 27th, or a few weeks ago; whether he would consider what action should be taken in regard to reports for subsequent years; whether a brief report covering the whole of the war years would meet the needs of the situation; and whether similar action could be taken in regard to any other belated reports.—Sir JAMES CRAIG replied: The Admiralty are advised that a break in the continuity of the statistical information contained in this report would to a great extent destroy the value of the whole series. The comparative statistics published in these reports form a basis on which preventive measures and effects of treatment in important diseases are estimated. Hardly any

economy will be effected by the course suggested by my honourable and gallant friend, but if the House will be satisfied not to have these reports issued as Command Papers, they could be produced as Stationery Office publications at a saving of about 20 per cent. on the present cost. The publication would then cost about £100 per annum.

Dental Legislation.

Mr. RAFFAN asked the Minister of Health whether he could now state when it was proposed to introduce legislation for the purpose of carrying out the recommendations of the Departmental Committee on the Dentists Act, 1878.—Dr. ADDISON replied: I regret that I am not in a position to state the date on which the Bill will be introduced, but in accordance with the promise which I made to a number of Members on behalf of the Lord Privy Seal, it is hoped to introduce this Bill before the end of the session in sufficient time for it to be printed and circulated to the honourable Members.

Tuberculosis Bill Postponed.

Captain ELLIOT asked the Minister of Health if he would say what steps were being taken to deal with the tuberculous ex-Service men; and whether the Tuberculosis Bill would be passed through all its stages this session.—Dr. ADDISON replied: Considerable additions have been and are being made to the available accommodation for the sanatorium treatment of tuberculous ex-Service men, and to the facilities available for the concurrent treatment and training of these men. Provision is made in the Public Health (Tuberculosis) Bill for the establishment of village settlements and employment colonies for the benefit of tuberculous patients and their families, but I regret to say that owing to the pressure of Parliamentary business it will not be possible to pass the Bill this session.—Captain ELLIOT: Can the right honourable gentleman give any information as to whether it will be introduced at any early date next session?—Dr. ADDISON: I think the Leader of the House has already replied to that question.

Serving Officers and Upkeep of Artificial Limbs.

Major GLYN asked the Minister of Pensions if he would reconsider the decision that the limited number of officers still serving in His Majesty's forces who, as a result of war service, were compelled to wear artificial limbs were at the same time made to bear the cost of the necessary upkeep and repair; whether officers who suffered in the war and who were capable of continuing to serve should have this extra burden of expense borne by the State since non-commissioned officers and men, although not allowed to continue in the service, had the cost of upkeep paid; and whether officers who were no longer serving were not called upon to bear the expense of the maintenance of the limbs and repair.—Sir A. WILLIAMSON (Financial Secretary to the War Office) replied: The cost of adjustment of artificial limbs, necessitated by the shrinkage of the stump, is defrayed by the Ministry of Pensions. Repairs occasioned by breakage or necessitated by fair wear and tear are paid for by the officer until he is retired, after which the Ministry defrays the cost. This differentiation between serving and retired officers is made because the serving officer is entitled to full pay as well as wound pension.

THURSDAY, DEC. 2ND.

Hospitals and Infirmaries in Denmark.

Mr. SWAN asked the Minister of Health whether the hospitals and infirmaries of Denmark were State-owned and controlled; whether any charge was demanded from those who needed treatment; and whether such services were efficient.—Dr. ADDISON replied: There is one State hospital in Denmark—at Copenhagen—and a number of voluntary hospitals provided by religious and philanthropic bodies, but the majority of general hospitals are provided and controlled by the local authorities. A scale of charges is laid down for each hospital, varying according to the accommodation provided. Payment is made for all patients, either by the patient himself, by the sickness society of which he is a member, or by the Poor-law authority. The information available is not sufficient to enable me to express any opinion as to the efficiency of the hospital service.

Voluntary Hospitals in America.

Sir J. D. REES asked the President of the Board of Trade whether large subscriptions were obtained in America from trade-unions towards the support of voluntary hospitals; and whether he would inquire into the system obtaining in the United States in this behalf.—Dr. ADDISON replied: I have no information on this point, but I will have inquiry made.

Concurrent Treatment and Training.

Mr. GRUNDY asked the Minister of Pensions (1) whether, taking into consideration the increased cost of living, he was prepared to revise the allowances payable to disabled men receiving or willing to receive concurrent treatment and training, especially as these men had to reside away from home, and bring these allowances up to such a standard as would ensure the proper upkeep of the men's homes; (2) whether he was aware that there were cases of disabled men having been granted concurrent treatment and training who had had to discontinue the same owing to the fact that the allowances payable were insufficient to meet the liabilities incurred in an ordinary household; (3) whether he was aware that there were disabled men who were unable, owing to their disabilities, to follow their pre-war occupations and who would willingly accept concurrent treatment and training if the allowances payable were sufficient; and whether better results of such training would not occur if the allowances paid to the men were based at a standard that would enable the men to devote their minds to such training.—Mr. MACPHERSON replied: The Government have recently considered proposals for an addition to pensions and allowances and have decided that no increase can be sanctioned at present. I have no information that would support the suggestion that disabled men are either unwilling to undertake, or are failing to complete courses of concurrent treatment and training on the ground that the allowances granted are inadequate.

TUESDAY, DEC. 7TH.

New Artificial Limbs.

Major BOYD-CARPENTER asked the Minister of Pensions if he would state why, in view of the fact that there was no light limb as yet available from Government sources, the Ministry refused to avail themselves of the proved use and efficacy of the light Desoutter limb and forbid the issue of the same to those disabled soldiers for whom the Roehampton limb had proved to be quite unsuitable and even dangerous; whether he was aware that the Roehampton limb supplied to disabled soldiers had in numerous cases proved an impediment rather than a help, in that its weight and form prevented many of those disabled from performing the duties of their employment; that in many cases the limb had broken after a brief use; and would the Longmato-Elmsley new light limb be available for distribution.—Major TRYON replied: I am glad to inform my honourable and gallant friend that the first supply of the light metal limb provided by this Ministry is now available and is being distributed. It has, so far, fully justified the high opinion of its merits formed by our experts. The supplies at Roehampton embrace over 12 different makes of artificial leg which have, on the whole, proved successful for different types of amputation, and from the information in my possession do not in any way merit the description of them given by my honourable and gallant friend.

Medical Officers and Sanatorium Benefit.

Mr. COWAN asked the Secretary for Scotland whether the Scottish Board of Health had issued a circular to insurance committees in Scotland intimating that after Dec. 31st it would be necessary to dispense with the services of their medical advisers, as after that date the work in connexion with sanatorium benefit would be performed by the tuberculosis officers of local health authorities, and suggesting that the committees should give formal notice to their medical advisers of the termination of their engagements; was there any precedent for the summary dismissal of public officers on grounds of public policy without any provision for compensation; and would he take steps to secure that with the transference of the work to the local authorities the liability for payment also would be transferred.—Mr. MUNRO replied: The answer to the first part of the question is in the affirmative. As regards the remainder of the question, the administrative changes arising out of the cessation of sanatorium benefit will result in the tranfer of the supervision of certain duties from insurance committees to local authorities. As the officials of the latter authorities have been acting as medical advisers to insurance committees, there will not be, in substance, any loss of office. I see no reason to doubt that local authorities will give fair consideration to the interests of these officials on the readjustment of their duties.

Remuneration of Tuberculosis Officers.

Mr. COWAN asked the Secretary for Scotland whether the Scottish Board of Health had issued a circular in which they proposed to supersede the system of payment of fees, 5s. per case, to tuberculosis officers for the examination and certification of discharged Navy and Army men, under the Ministry of Pensions, by a system of lump sum payments to local authorities; and whether he would take steps to secure that tuberculosis officers would not be called upon to carry out this difficult and responsible work, outwith their statutory duties under local authorities, without adequate remuneration.—Mr. MUNRO replied: The answer to the first part of the question is in the affirmative. I do not anticipate that any tuberculosis officer will be asked to render services in connexion with the pensions of tuberculous ex-Service men without adequate remuneration.

Medical News.

UNIVERSITY OF OXFORD: DEGREE DAYS.—The following dates have been appointed for the conferring of medical and other degrees: Dec. 17th (10 A.M.), Jan. 20th (10 A.M.), Feb. 12th (2.30 P.M.), March 3rd (10 A.M.), March 19th (10 A.M.).

The Sidney Ball Lecture, 1921, will be delivered by Mons. Emile Vandervelde, Minister of Justice, of Belgium.

The final edition of the University Roll of Service will be issued during the present month.

ROYAL INSTITUTION.—Professor Arthur Keith has been re-elected Fullerian professor of physiology for a further term of three years. The Christmas Course of Juvenile Lectures this year will be delivered by Professor J. Arthur Thomson on the Haunts of Life, commencing on Dec. 30th with the School of the Open Shore, followed by lectures entitled the Open Sea, the Great Deeps, the Freshwaters, the Conquest of the Land, and the Mastery of the Air.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., on Dec. 16th, at 8.30 P.M., when a discussion on the Future of the Poor-law Infirmary will be introduced by Dr. C. M. Wilson and Dr. Charles Buttar, and followed by Mr. E. W. Morris (House Governor at the London Hospital) and others.

SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS.—A meeting of this society will be held at 122, Harley-street, London, W., at 4 P.M. on Monday, Dec. 13th, when reports will be submitted by committees on standards of medical and nursing staffs, and on the coördination of tuberculosis statistics. A discussion will take place on a scheme of sickness insurance for ex-patients.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—Lieutenant-Colonel H. R. Kenwood will deliver his presidential address to the Navy, Army, and R.A.F. Hygiene Group of this society, on Friday, Dec. 17th, at 5 P.M., at the house of the society, 1, Upper Montague-street, Russell-square, London, W.C. All past and present officers interested in naval and military hygiene are invited to attend.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—The next meeting of this society will be held at the laboratories of the London School of Tropical Medicine, 23, Endsleigh-gardens, London, N.W., on Friday, Dec. 17th, at 8.30 P.M., when demonstrations will be given by the following: Colonel S. P. James, Surgeon Rear-Admiral P. W. Bassett-Smith, Dr. A. C. Stevenson, Lieutenant-Colonel G. E. F. Stammers, Dr. Andrew Balfour, Dr. P. Manson-Bahr, Colonel A. Alcock, F.R.S., Dr. J. G. Thomson, Professor R. T. Leiper, Dr. G. C. Low, Mr. A. Bacot, Colonel Clayton Lane, Sir Stewart Stockman, and Mr. J. T. Edwards.

MUNICIPAL HOSPITALS AND THE GENERAL PRACTITIONER.—At a meeting of the medical profession of Hampstead, convened by the Hampstead Medical Committee on Nov. 26th, the following resolution was unanimously passed:—

That in the event of a borough or county taking over the administration of a workhouse and converting it into a hospital (as is suggested at Bradford) no scheme should be passed by the Ministry of Health which does not recognise the right of the general practitioners to send in their patients and attend them there and to have access to all the equipment of the hospital.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The third meeting of the sixty-fifth session of this society will be held in the Gymnasium (old board room) of the Miller General Hospital for South-East London, Greenwich-road, S.E., to-day, Friday, Dec. 10th, at 8.45 P.M., Dr. A. M. Cato, the President, in the chair, when the Purvis oration will be delivered by Mr. William Turner on "Some Surgical Difficulties." A demonstration of the Cauterising Powers of Diathermy will be given by Dr. E. P. Cumberbatch.

MANCHESTER ROYAL INFIRMARY: RESIGNATION OF SIR WILLIAM THORBURN.—The resignation of Sir William Thorburn, honorary surgeon to the Manchester Royal Infirmary, has been accepted by the board of management with regret. Sir William Thorburn asked to be allowed to relinquish his appointment, because since his return to England he had found it extremely difficult to devote to the institution as much time as he would like. The chairman referred to the invaluable services rendered by Sir William Thorburn since he was appointed to the staff 30 years ago. Sir William Thorburn will continue to be associated with the infirmary in an honorary consultative capacity. Mr. C. Roberts was appointed to fill the vacancy created by the resignation.

HOME FOR INCURABLES, MANCHESTER.—The financial position of this home, with its 111 inmates, as shown by the annual report, is a serious one. The hospital cannot take in more patients, and the indoor staff is not large enough to cope with additional work. It is not feasible for this type of hospital to institute charges for admission. At the end of the year's working the deficiency was £3207, exclusive of a debit balance of £1405 at the end of 1919. To meet this £2829 was transferred from capital (legacy and investment account) to current account, leaving still a debt of £1783.

MANCHESTER HOSPITAL SUNDAY FUND.—The ordinary income of about £8600 showed an increase of £2000, but considering the wealth of Manchester and the district this sum is still far below what seems possible and does not compare favourably with that contributed by certain other populous and rich communities. It does not come up to the amount required by the committee, having regard to the immense number of cases—265,000—treated by the organisations assisted by the Fund. The balance-sheets of these organisations and institutions show a total deficit of £51,000, and many of these have been compelled to realise investments to meet ordinary expenditure. A gift of £25,000 by the late Mr. Jesse Howarth, of Altrincham has been invested in 5 per cent. war stock and will prove a very substantial aid.

UNIVERSITY COLLEGE, JOHANNESBURG.—Dr. Oliver K. Williamson has been appointed to the Chair of Medicine and Dr. John McGibbon to the Chair of Obstetrics in the Medical School. Dr. Williamson is at present physician to the City of London Hospital for Diseases of the Chest, and Dr. McGibbon is obstetric physician to New Town Dispensary and lecturer on obstetrics and gynæcology at the School of Medicine of the Royal Colleges, Edinburgh.

INDIAN WAR MEMORIAL AT BRIGHTON.—The memorial on the Brighton Downs erected on the site of the burning ghat to Indian soldiers who died in the war, and primarily to the Sikhs and Hindus whose bodies were incinerated there, also to the Mahommedans who were buried at Woking, is approaching completion. It will be unveiled in the presence of the Prince of Wales on Feb. 1st. The memorial is a chattri—equivalent to a cenotaph—designed by Mr. E. C. Henriques, formerly a student at the Bombay School of Architecture. The other Indian memorial in the town of Brighton, commemorating the use of the Royal Pavilion as a great Indian hospital, will be the new gateway at the southern entrance to the Pavilion. This will not be completed until April or May next.

ROTHERHAM AND DISTRICT MEDICAL GUILD.—The annual dinner of this Guild was held at the Crown Hotel, Rotherham, on Dec. 3rd, with Dr. H. E. Knight, J.P., the President, in the chair. A large attendance of members and their friends testified to the continued popularity of the Guild, founded 20 years ago. The guests included the Mayor of Rotherham, the Greave of the Feoffees, the President of the Chamber of Commerce, and the Professors of Medicine and of Surgery of Sheffield University. The President referred to the good feeling which the Guild had promoted amongst the medical men of the town, and to the valuable services it had rendered during the war in organising and distributing the work of members absent on war service. He referred particularly to the devoted services as secretary of Dr. G. H. Lodge, to whom the continued success of the Guild was largely due.

INTERNATIONAL UNION AGAINST TUBERCULOSIS.—The Secretariat of the International Union has issued to the various national associations for the prevention of tuberculosis the conclusions which were reached by the Conference held in Paris last October. They run as follows:—

1. It is necessary to educate both the medical profession and the laity in regard to the prevention of tuberculosis.
2. Inquiry should be made as to the number of cases of tuberculosis, including both latent and active disease, in the various countries, and in relation to the age, sex, occupation, and social conditions of the population.
3. Comparative statistics are required on the death-rate and on the clinical varieties of tuberculosis.
4. A sufficient number of dispensaries should be established and staffed by physicians, nurses, and health visitors specially trained.
5. In the neighbourhood of urban centres institutions are necessary for the treatment of curable cases and for the isolation of advanced cases.
6. It is necessary to provide infant clinics, open-air schools, and foster homes for healthy children born of tuberculous parents.

The following representatives have been appointed as a provisional executive committee to prepare the permanent constitution for an International Union: Sir Robert Philip, President; Dr. Dewoz (Belgium), Vice-President; Dr. Gerald Webb (United States); Professor Calmette (France); Professor Cantacuzène (Roumania); and Professor Léon Bernard (Paris), Honorary Secretary.

VILLAGE CENTRES COUNCIL.—**A further grant of £25,000** has been made to this council by the British Red Cross Society.

ROYAL SANITARY INSTITUTE: HENRY SAXON SNELL PRIZE.—The Henry Saxon Snell Prize, founded to encourage improvements in the construction or adaptation of sanitary appliances, will in 1921 consist of 50 guineas and the medal of the institute, for an essay on "Suggestions for a System of Central Hot Water-supply and Heating, adapted to Modern Housing Schemes and to Existing Groups of Houses." The following points are to be dealt with: (1) Central installation; (2) appliances for and methods of distribution; (3) methods of conserving the heat; (4) provision for continued supply during repair of system; (5) cost, initial and service; (6) combination with other services for reducing expenses. Further particulars may be obtained from Mr. E. White Wallis, secretary, at 90, Buckingham Palace-road, London, S.W.1.

GRATUITOUS WORK FOR THE STATE.—**An Irish** correspondent writes: Medical men have given so much of their time and skill gratuitously to the public that public officials have come to take such gifts as a matter of course. A particularly imprudent demand has been made public by Dr. Leonard Kidd, of Enniskillen, in a letter to the Assistant Under Secretary, of which he has published a copy last week in the *Fermanagh Times*. The Government has decided to enrol a number of "well-disposed citizens" in Ulster as special constables, and in regard to one class of these, Class A, a preliminary medical examination is necessary. Dr. Kidd, in common with other medical attendants on the Royal Irish Constabulary, received an invitation from the Assistant Under Secretary for Ireland for his "kind coöperation and assistance in an honorary capacity in regard to the medical examination of candidates." He very naturally protests against the attitude of a Government official in expecting to get such professional duties performed without remuneration. He asked whether clothiers have been invited to provide uniforms and printers to undertake advertising in "an honorary capacity," and whether, in the event of special constables falling ill, medical men are expected to give attendance on similar lines. It is, in fact, impossible to find any justification for the demand made by the Irish Government.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Tuesday, Dec. 21st.

GENERAL MEETING OF FELLOWS: at 5 P.M.
Ballot for Election to the Fellowship.

MEETINGS OF SECTIONS.

Monday, Dec. 13th.

WAR SECTION: at 5.30 P.M.
Paper:
Surgeon-Commander E. L. Atkinson, D.S.O., A.M., R.N.: Snow-blindness—its Prevention, Cause, and Treatment.

Tuesday, Dec. 14th.

SECTION OF THERAPEUTICS AND PHARMACOLOGY: at 4.30 P.M. at 1, Wimpole-street (not, as first announced, at Mount Vernon Hospital).
Papers:
Dr. W. E. Dixon: Quinine Derivatives as Local Anæsthetics.
Dr. Orlando Inchley: Absorption of Drugs by Means of the Electric Current.
Dr. W. E. Dixon and Dr. Douglas Cow: Actions of Isomeric Methyl Chlorides of Tellurium.

SECTION OF MEDICINE: at 5 P.M. at the London Hospital.
Demonstrations, &c., by the Physicians.
Paper:
Mr. D. Hunter: The Results of Fractional Test Meals on Patients.
Tea will be served at 4.30 P.M. Members who intend coming to tea should send their names to Dr. Poulton, at 1, Wimpole-street, before Dec. 13th.

SECTION OF PSYCHIATRY: at 8.30 P.M.
Paper:
Dr. A. F. Tredgold: Moral Imbecility.

Wednesday, Dec. 15th.

SECTION OF HISTORY OF MEDICINE: at 5 P.M.
Papers:
Mr. Charles Sayle: The Library of Thomas Lorkin, Regius Professor of Physics.
Professor J. A. Gunn: Sir John Floyer.

Thursday, Dec. 16th.

SECTION OF DERMATOLOGY: at 5 P.M. (Cases at 4.30 P.M.)
Cases: The following will be shown by—
Mr. H. S. Souttar (introduced by Dr. Sequeira): Cases after Operation for Extensive Hairy Moles of the Face.
Dr. H. W. Barber and Dr. G. Marshall: Dermatitis Scrofulosa.
Dr. H. C. Semon: Bilateral Parotitis of (?) Syphilitic Origin.

Friday, Dec. 17th.

SECTION OF ELECTRO-THERAPEUTICS: at 8.30 P.M.
Adjourned Discussion on "Radio-therapy."
Paper:
Dr. R. Morton: Recent Developments in Deep Therapy.
Dr. L. Martindale: Technique of X Ray Therapy of Fibroids.
Dr. H. G. Adamson, Dr. Gilbert Scott, and others will take part in the discussion.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.
MONDAY, Dec. 13th.—8 P.M., Cantor Lecture:—Mr. A. C. Chapman: Micro-organisms and Some of their Industrial Uses. (Lecture II.)

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, at the London School of Tropical Medicine, 25, Endsleigh-gardens, N.W.
FRIDAY, Dec. 17th.—8.30 P.M., Laboratory Meeting. Demonstrations will be given by Col. S. P. James, Surg. Rear-Admiral P. W. Bassett-Smith, Dr. A. C. Stevenson, Lieut.-Col. G. E. F. Stammers, Dr. A. Balfour, Dr. P. Manson-Bahr, Col. A. Alcock, Dr. J. G. Thomson, Prof. R. T. Leiper, Dr. G. C. Low, Mr. A. Bacot, Col. C. Lane, Sir Stewart Stockman, and Mr. J. T. Edwards.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Dec. 13th.—12.15 P.M., Dr. Burnford: Pathological Demonstration. 5 P.M., Lecture:—Mr. Gibb: Rheumatic Affections of the Eye.
TUESDAY.—10 A.M., Mr. Steadman: Dental Department. 2 P.M., Mr. Banks Davis: Diseases of the Throat, Nose, and Ear.
WEDNESDAY.—10 A.M., Dr. A. Saunders: Medical Diseases of Children. 5 P.M., Lecture:—Mr. D. Armour: Arthritis.
THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 5 P.M., Special Lecture:—Lady Barrett: Puerperal Sepsis (open to all medical practitioners).
FRIDAY.—2.30 P.M., Mr. Addison: Visit to Surgical Wards. 5 P.M., Lecture:—Mr. B. Harman: Tuberculous Affections of the Eye.
SATURDAY.—12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen. 2 P.M., Dr. Owen: Medical Out-patients.
Daily:—10 A.M., Ward Visits. 2 P.M., In-patient, Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
Special Post-Graduate Course (second week):—
MONDAY, Dec. 13th—10.30 A.M., Mr. N. Fleming: Medical Ophthalmology. 11.45 A.M., Dr. C. F. Hadfield: Some Recent Anæsthetic Methods. 2 P.M., Mr. W. E. Tanner: Cases of Diseases of the Breast. 4.30 P.M., Lecture:—Dr. P. Manson-Bahr: Diarrhœas of Tropical Origin.
TUESDAY.—10.30 A.M., Mr. T. H. C. Benians: The Laboratory Investigation of Intestinal Infection. 11.45 A.M., Dr. A. J. Whiting: Graphic Methods in Heart Disease (Cases). 2 P.M., Mr. J. H. Evans: Cases illustrating Thyroid Enlargement. 4.30 P.M., Lecture:—Lieut.-Col. H. Kirkpatrick: Cataract.
WEDNESDAY.—10.30 A.M., Dr. J. B. Alexander: Cytology in Diagnosis. 11.45 A.M., Mr. E. Gillespie: The Examination of Cases of Joint Disease. 2 P.M., Dr. W. J. Oliver: Selected Cases of Skin Disease. 4.30 P.M., Lecture:—Mr. J. H. Evans: Intestinal Obstruction involving the Small Intestine.
THURSDAY.—10.30 A.M., Mr. C. H. Hayton: Otoscopy. 11.45 A.M., Mr. H. W. Carson: Choice of Abdominal Incisions. 2 P.M., Dr. J. Metcalfe: Cases of Disease of the Thyroid treated by X Rays. 4.30 P.M., Clinical Consultations (Obscure Medical Cases).
FRIDAY.—10.30 A.M., Mr. T. H. C. Benians: Bacteriology of Cutaneous Infections. 11.45 A.M., Mr. W. E. Tanner: The After-treatment of Abdominal Operations. 2 P.M., Mr. E. Gillespie: Selected Surgical Cases. 4.30 P.M., Lecture:—Sir Thomas Horder: The Investigation and Treatment of a Case of Arthritis
SATURDAY.—11 A.M., Dr. J. Macarthur (at the L.C.C. Mental Hospital, New Southgate, N.): Demonstration of Selected Cases of Dementia Præcox. 2.30 P.M., Dr. A. W. Stott (at the Royal Hospital for Diseases of the Chest, City-road, E.C.): Demonstration of the Electrocardiographic Examination of Cases of Heart Disease.
Each Day:—3-4 P.M., General Hospital Work.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Dec. 16th.—4 P.M., Lecture:—Dr. Frew: Significance of Cough.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.
MONDAY, Dec. 13th.—5.30 P.M., Post-Graduate Lecture:—Dr. Moon: Angina Pectoris.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Dec. 14th.—4.30 P.M., Lecture:—Mr. E. W. Telford: The Management of the Enlarged Prostate.

SALFORD ROYAL HOSPITAL AND ANCOATS HOSPITAL POST-GRADUATE DEMONSTRATIONS, at the two Hospitals alternately.
THURSDAY, Dec. 16th.—4.30 P.M., Mr. Platt: Internal Derangements of the Knee-joint. (At Ancoats Hospital.)

BOOKS, ETC., RECEIVED.

GRIFFIN, CHARLES, AND CO., London.
Dairy Chemistry: A Practical Handbook. By H. D. Richmond, F.I.C. 3rd ed., revised and reset. Pp. 490. 25s.
Poisons: Their Effects and Detection. By A. W. Blyth, M.R.C.S., and M. W. Blyth, B.Sc. Lond. 5th ed., revised, enlarged, and rewritten. Pp. 745. 35s.
A Short Practice of Midwifery. By H. Jellett, M.D. 8th ed., revised. Pp. 548. 18s.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

FELDMAN, W. D., M.B., B.S. Lond., has been appointed Medical Registrar to the Prince of Wales General Hospital, Tottenham.

FORREST, J. V., Colonel, R.A.M.C., Superintendent of the Royal Victoria Hospital, Belfast.

KIRKHOPE, G., M.B., Ch.B. Glasg., Medical Officer to Waterside and Patna.

PEACOCK, J., M.B., B.S. Durh., Certifying Surgeon under the Factory and Workshop Acts for Leyburn.

Royal Chest Hospital, City-road: Lord DAWSON OF PENN, Consulting Physician; STOTT, A. W., M.R.C.P. Lond., M.R.C.S., Physician; ABRAHAMS, A., M.D., B.C. Camb., SUTHERLAND, H., M.D., Ch.B. Edin., Assistant Physicians; ALEXANDER, J. B., M.D., Ch.B. Glasg., Resident Medical Officer; BUTTERY, H. R., M.R.C.S., L.R.C.P. Lond., House Physician.

Vacancies.

For further information refer to the advertisement columns.

Abergavenny, Monmouthshire Asylum.—Jun. Asst. M.O. £400.
Barnstaple, North Devon Infirmary.—H.S. £200.
Bethlem.—Res. H.P. £25 per quarter.
Birmingham and Midland Ear and Throat Hospital.—H.S. £400.
Birmingham General Hospital.—Res. Anæsth. Also H.P. £100.
Blackburn County Borough.—Female Asst. M.O.H. £803 7*s.* 6*d.*
Bradford City.—Asst. Bact. £600.
Burnley County Borough.—Asst. M.O.H. £500.
Cambridge, Addenbrooke's Hospital.—Hon. Bio-Chemist for the John Bonnett Memorial Clin. Lab. £100.
Cancer Hospital (Free), Fulham-road, London, S.W.—Director of Research Inst. and Director of Path. Dept. £1200 and £800 respectively.
Canterbury, Kent and Canterbury Hospital.—Res. M.O. £175.
Cardiff, King Edward VII. Hospital.—Hon. Ophthal. S.
Church Army Lads' Sanatorium, Surrey.—Res. M.O.
Colonial Service.—M.O.'s for West African Medical Staff, Government Service in Malaya, East African Protectorates, West Indies (including British Guiana), Fiji, and the Western Pacific, &c.
Coventry and Warwickshire Hospital.—Res. H.P. £250.
Denbigh, North Wales Counties Mental Hospital.—Sen. Asst. M.O. £500.
Doncaster Royal Infirmary and Dispensary.—Asst. H.S. £225.
Down District Asylum, Downpatrick.—Asst. M.O.'s. £300.
Dundee City and Royal Burgh.—Ven. Dis. M.O. £700.
Gloucestershire Royal Infirmary and Eye Institution.—Asst. H.S. £150.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hampstead General and North-West London Hospital, Haverstock Hill, N.W.—H.P., H.S., Cas. M.O., and Cas. S.O. £150.
Hornsey Borough.—M.O.H., Med. Supt. of Isolation Hospital, School M.O., &c. £1000.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Asst. P. Also Asst. in Dept. of Path. £250.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—Ear, Nose, and Throat S.
Hospital for Sick Children, Great Ormond-street, W.C.—Cas. M.O. £400.
Hull Royal Infirmary.—Asst. H.S. £150.
Inverness, Northern Infirmary.—H.S. £150.
King's College Hospital, Denmark Hill, S.E.—Res. House Anæsth.
Leicester City.—Female Asst. M.O., Maternity and Child Welfare. £500.
Lincoln County Hospital.—Jun. H.S. £150.
Liverpool, Brownlow Hill Poor-law Hospital.—Res. Asst. M.O. £300.
London County Mental Hospital Service.—Sixth and Seventh Asst. M.O.'s. £300.
London Hospital, Whitechapel, E.—S. Registrar. £365.
London Lock Hospital, 91, Dean-street, W.—Clin. Assts.
London (Royal Free) School of Medicine for Women.—Prof. of Obstet. and Gynæc. and Direc. of the Obstet. and Gynæc. Unit. £2000.
Madras and Southern Mahratta Railway Company, Limited.—District M.O. Rs. 750 per mensem.
Manchester, Ancoats Hospital, Mill-street.—H.S. £150.
Manchester, Barnes Convalescent Hospital, Cheadle.—Res. M.O. £300.
Manchester Medical Mission.—Doctor. £54 12*s.*
Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—Pathologist. Also H.S.
Manchester Royal Infirmary.—M.O. for Massage and Electrical Dept. £150. Accident-room H.S. £200. H.S. £50 for first six months, £100 second. Asst. Res. Surg. O. £200. Hon. Asst. S.
Manchester, Whitworth Park Hospital.—H.S. £100.
Margate, Royal Sea-Bathing Hospital for Surgical Tuberculosis.—Female S. £200.
Metropolitan Hospital, Kingsland-road, E.—Cas. O. and Res. Anæsth. £120.
Napsbury Mental Hospital, Napsbury, near St. Albans.—Third Asst. M.O. £425.
Newark Hospital and Dispensary.—Res. H.S. £200.
Newcastle-upon-Tyne Hospital for Sick Children.—Jun. Res. M.O. £200.
Newport, Mon., Royal Gwent Hospital.—Jun. Res. M.O. £180.
Oxfordshire Education Committee.—Sch. Dent. £450.
Pembroke and Pembrokeshire County Education Authority.—M.O.H. and Sch. M.O. £600.
Prestwich County Asylum, Lancashire.—Asst. M.O. Also Locum Tenens.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Hon. Radiologist. £100.
Queen Mary's Hospital for the East End, Stratford, E.—Hon. Ophthal. S.
Royal Free Hospital, Gray's Inn-road, W.C.—Surg. Regis. £250.
Royal Institute of Public Health, 37, Russell-square, London, W.C.—Bacteriologist.
St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum, City-road, E.C.—H.S. £250.
St. Marylebone General Dispensary, 77, Welbeck-street, Cavendish-square, W.—Hon. P.
Seamen's Hospital Society, Dreadnought Hospital, Greenwich.—P. Also Anæsth.
Sheffield Royal Hospital.—Asst. Cas. O. £150.
Southport General Infirmary.—Hon. Asst. M.O.
South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Sen. and Jun. H.S. £225 and £175.
Stroud General Hospital.—H.S. £200.
Sunderland Royal Infirmary.—Sen. H.S. and H.P. £250 and £200 respectively.
Sunderland, Royal Infirmary (Children's Hospital).—Female Jun. Res. M.O. £150.
Taunton and Somerset Hospital.—Res. Asst. H.S.
University College Hospital Medical School.—Part-time Demonstrator of Public Health, Bacteriology. £250.
University College, London.—M.O. £800.
West London Hospital, Hammersmith-road, W.—H.P. £50.
Westminster Hospital.—H.S.
West Middlesex Hospital, Isleworth.—Asst. Med. Supt. £300.
West Norfolk and King's Lynn Hospital.—Res. M.O. £150.
Wolverhampton and Staffordshire General Hospital.—Res. Surg. O. £300.
York, The Retreat.—Temp. Jun. A.M.O. £25 per month.

The Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Barnstaple.

Births, Marriages, and Deaths.

BIRTHS.

MACALISTER.—On Oct. 22nd, at Sepoy Lines, Singapore, the wife of Dr. G. H. Macalister, of a daughter.

MACAULAY.—On Nov. 3rd, 1920, at Seremban, Federated Malay States, the wife of T. S. Macaulay, M.D., D.T.M., of a daughter.

MOWAT.—On Dec. 2nd, at Muirlands, Lairg, Sutherlandshire, the wife of Dr. Mowat, of a son.

SHEPHERD.—On Nov. 29th, at Thorne-road, Doncaster, the wife of W. Moir Shepherd, M.D., F.R.C.S., of a son.

MARRIAGES.

FITZWILLIAMS—WAGNER.—On Nov. 23rd, in Riga, at the Roman Catholic Church, Duncan Campbell Lloyd Fitzwilliams, C.M.G., M.D., F.R.C.S., to Francesca Christine Wagner, M.B.E., daughter of the late Ferdinand Wagner and Mrs. Wagner, of Riga.

HAMILTON—DOUGLAS.—On Dec. 3rd, at Edinburgh, David Hamilton, M.B., Ch.B., to Marion MacQueen, daughter of Mr. and Mrs. John Douglas, St. Mary's-grove, Barnes Common.

HENRY—MORRIS.—On Dec. 3rd, at Hyndland Parish Church, Glasgow, Surgeon Lieutenant-Commander Arthur Martin Henry, R.N., to Elizabeth Lindsay, daughter of Mr. and Mrs. T. R. Morris, Lucknow, Jordan Hill, Glasgow.

DEATHS.

ASHDOWN.—On Nov. 25th, at Grosvenor-road, Ripley, Derby, George William Wetton Ashdown, M.D., F.R.C.S., aged 62.

CLEMENTS.—On Dec. 5th, at High Wycombe, very suddenly, William Herbert Clements, L.R.C.P., L.R.C.S.

DE VALLANCEY.—On Dec. 2nd, at Shaftesbury-road, Hammersmith, W., Aymer d'Estampes de Vallancey, L.R.C.P., M.R.C.S., in the 58th year of his age.

POPE.—On Nov. 29th, after a short illness, at Margate, Thomas Henry Pope, Lieutenant-Colonel (late of Indian Medical Service), M.D., B.Sc., F.R.C.S.E., aged 67.

SAUNDERS.—On Dec. 1st, at Kingston, Jamaica, W. H. P. Saunders, M.B., B.S. Lond., third son of Dr. Saunders, Pembroke Dock.

TAYLOR.—On Dec. 2nd, after a long illness, Sir Frederick Taylor, Bt., M.D., F.R.C.P., formerly President of the Royal College of Physicians, aged 73.

*N.B.—A fee of 7*s.* 6*d.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

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FAMINE DROPSY AND PIONEER WORK IN INDIA.[1]

BY J. A. NIXON, C.M.G., M.D. CAMB., F.R.C.P. LOND.

European Outbreaks in the Fifteenth, Sixteenth, and Seventeenth Centuries.

IN 1528 the army sent into Italy by Francis I. besieged Naples; famine ravaged its camp, and fevers and debilitating diarrhœas broke out. "Those soldiers who were not already confined to bed in their tents, were seen with pallid visages, swelled legs, and bloated bellies, scarcely able to crawl." This description, which Hecker derived from Jovius, has been quoted as the first account of war œdema, which we also know under the names of hunger œdema and famine-dropsy. At least it furnishes a typical example of the conditions under which famine dropsy arises, and of the difficulty there is in distinguishing it among a confused medley of swellings and œdemas. In the light of present knowledge we may guess that the French army suffered from dysentery, scurvy, and malaria, and speculate on the possibility of occasional enteric fever, pellagra, and beriberi, or even kala-azar and ankylostomiasis. On looking through the list some physicians with experience of recent campaigns might ask to add nephritis and war œdema. Hecker himself regrets that there was no Machaon in the French camp who could have left us observations on the combination and affinity of petechial fever and bubo plague. A petechial fever was at that time prevalent all over Italy, whilst in 1524 bubonic plague carried off 500 people in Milan. I find it hard to accept the account given by Jovius as being that of an unequivocal outbreak of famine dropsy. But it is an excellent example of the obscurity from which the condition had to emerge before establishing itself as a clinical entity.

There is a similar reference to dropsy in Vander Mye's description of the diseases which broke out during the siege of Breda in 1625. "Of those who were afflicted with the flue," he says, "few escaped. ..... They afterwards became bloated, relaxed, and dropsical. Watery swellings of the testicles were frequent. ..... Some died early in the disease—viz., those who had seldom any evacuation of blood by the nose or stool, and seemed from the beginning indolent and blown up as it were with wind. Their stools were greasy, fœtid, and of various colours, but not frequent." Sydenham quotes as a common saying "ubi desinit scorbutus, ibi incipit hydrops." I cannot find any other reference to this as a common saying in contemporary writers on either disease.

The Eighteenth Century.

In the wars and famines of the eighteenth century there are a few bare statements of the occurrence of œdema without exact enough descriptions to identify a true famine dropsy. But J. Lind gives an extract from a letter written by the surgeon of the *America* ship-of-war, dated Nov. 11th, 1762, which shows that an observer familiar with scurvy was struck by the novelty of a form in which dropsy was a predominant symptom. "Eight or nine hundred men of the East India squadron were lost from an extraordinary species of scurvy. ..... The disease most commonly began with a soft swelling of the legs," mounting up until "the patients laboured under an universal dropsy, accompanied with swelled putrified gums, a stiffness at the joints of the knees, livid stains, and scorbutic spots. ..... They all died of a suffocation from water except those from whom the water was constantly drained off by the means before mentioned (i.e., tapping) and they, after languishing for some time, expired at length when reduced almost to perfect skeletons."

Although C. Maase and H. Zondek refer to Sir John Pringle as describing dropsy in the British Army during the Netherlands campaign of 1742–1748, I do not find any resemblance between the conditions mentioned by Pringle and famine dropsy. In one sentence he says: "A long continuance of these fevers (i.e., remitting and intermitting) or frequent relapses into them brought on visceral obstructions, ending in a dropsy or jaundice." I have failed to discover the original from which Holzhausen (whose book was published in 1912) took his quotation concerning the observation of famine dropsy during Napoleon's retreat from Moscow in 1812. It is possible that it occurs in von Roos's "Recollections." The passage is as follows: "The great majority of the thousands who had up to the present perished were plainly victims of exhaustion, of marasmus, as the premonitory signs of these conditions manifested themselves by swellings of the limbs. Quite at the beginning of the campaign the frequent occurrence of such an "œdema" attracted the attention of the Wurtemberg Staff-Surgeon Koellreutter.

First Reliable Account of Famine-dropsy.

During the early years of the nineteenth century there were several opportunities for observing the effects of want and famine during times of peace. In the Irish famine of 1835 R. B. Holland observed œdema in some of the victims. But in a discussion at the Société de Médecine de Gand in 1847 is found the first clear and reliable account of famine dropsy and its post-mortem appearances. A. C. Lados described the autopsy in a case of death from starvation, saying "serosity infiltrated all the tissues and collected in the various cavities of the body." D. B. J. Mareska said: "It is bread that will cure them. ..... Many others have died solely from insufficient nutrition. In these latter above all one observes an excessive emaciation produced slowly and without obvious functional disorder: but soon the extremities become infiltrated, respiration becomes embarrassed, and symptoms of dropsy of the chest are manifested. After death one finds a large serous effusion in the pleura, and particularly in the pericardium." This I regard as the first unequivocal description of famine dropsy.

The Dictionnaire Encyclopédique des Sciences Médicales contains in three articles most definite accounts of the œdema resulting from starvation. By 1878 famine dropsy has become a well-recognised clinical entity with its Latin title of "hydrops famelicus." Under "Anasarque," we read, "it constitutes the most ordinary phenomena of the grave general state produced in individuals subjected to insufficient alimentation," and in the wretched inmates of prisons. Of "œdema," it is stated, "finally dropsies have for a long time past been observed in the starving (hydrops famelicus) in besieged towns during great famines (disette des Flandres, epidémies d'Anzin, d'Eichfeld, de Chemnitz, &c.)." Famine dropsy had thus been pretty definitely recognised in Europe during the first half of the nineteenth century. But the observations were superficial and not very scientific.

Beginnings of Work on the Problem in India.

It is to India that we must transfer our historical inquiries to come upon the beginnings of scientific work on this problem. Digby sums up the difficulties which confronted the officers of the Indian Medical Service in the investigation of the famine of 1877–78 in his book "The Famine Campaign in Southern India." "Village officers," he says, "had been warned that no one was to be permitted to die of want, and consequently no death had been returned under that heading."

Fortunately the sanitary officer of Madras was Dr. W. R. Cornish, who had published in 1865 his "Observations on the Nature of the Food of the Inhabitants of Southern India and on Prison Dietaries in the Madras Presidency." We may almost date the modern scientific study of famine dropsy from Cornish's paper. For he recognised that beriberi, lathyrism, and scurvy were not identical with starvation dropsy, and discussed the effect of transferring certain long-sentence prisoners from Salem jail to Madras, where they received a different dietary; these men became unhealthy, and within three months six of the one hundred died of diseases of a scorbutic type, such as diarrhœa and dropsy. Elsewhere he speaks of a general impression of medical officers that those who subsist chiefly on rice suffer from decay of vital powers, dyspepsia, and ulceration of mucous surfaces of the large intestine. Cornish's observations before the famine of 1877 were not limited to his experience with these prisoners. In 1872 men of a detachment of native troops, sent from Burmah to occupy a post on the Arracan river, in coöperation with the Lushai expedition, had no market at hand in which to buy animal food; in attempting to live on their rations they sickened and died in large numbers; Cornish recorded 901 hospital admissions and 27 deaths (dropsy 12, debility 5).

Digby has left a careful and impartial account of the 1877 famine from a non-medical standpoint. He quotes several passages which show how striking a symptom dropsy was during this famine. Twice the correspondent of the *Friend of India* is his authority. "Dr. Ross, of Nellore, told me (i.e., the correspondent) that he had not found the dropsy as invariably fatal as other medical men have represented it to be; he seemed to think its ending in death or not depended on the extent to which the diarrhœa that preceded it had gone." This correspondent is quoted again as saying, "I saw altogether about 30 cases of extreme emaciation, as bad as the worst cases in the Madras relief camps. About half of them were suffering from diarrhœa or from the fatal dropsy that often follows the diarrhœa." Cornish is quoted by Digby as having seen old men and old

[1] Being the substance of an address delivered at the History of Medicine Section of the Royal Society of Medicine.

women bloated with dropsy. So we begin to form some mental picture of famine and its attendant œdema. Presently the Government of India sent as a special famine commissioner Sir Richard Temple, who advised the Government that the relief ration of grain might be somewhat reduced, and reported that on this reduced ration the famine sufferers grew fat. Cornish retorted with a minute to the Madras Government which deserves to be remembered. "Even in the weight test some caution is necessary, for many of the people who come into camps appear to be filling out and fattening when in reality they are getting dropsical and in a fair way to die." In this minute he names the following results of jail punishment in the form of reduced rations. "Great increase of sickness and mortality from the diseases such as now fill our famine camps—viz., sloughing ulcers, bowel complaints, dropsy and impoverished blood. ..... I never now hear of increase of bowel disorders and dropsies in a jail without at once suspecting tampering with the food, or privation in the district furnishing the prisoners." The *British Medical Journal* paid a just tribute to Cornish's efforts, praising in particular "the boldness and honesty with which that officer resisted the measures of Sir Richard Temple ..... measures which at one time threatened to destroy more people than the famine." Cornish, moreover, obstinately maintained that the principal factor in the production of this form of dropsy was deficiency of nitrogenous food.

A. Porter, another officer of the Indian Medical Service, published accurate observations of famine-dropsy, made when in medical charge of a relief camp during 1877-78 in the Madras Presidency. He was the first to record the post-mortem appearance now regarded as the crucial sign of famine-dropsy. He draws attention to the total absence of fat in the body and to its replacement by œdema. Thenceforth, until the recent war, there seems no sign of work on the subject except in India and the East, where the problem was being slowly and quickly elucidated.

Epidemic Dropsy in Mauritius.

Whilst the memory of the famine of 1877 and its attendant dropsy was still fresh in the minds of medical officers in India, a strange form was noticed in Indian coolies imported into the island of Mauritius. This outbreak has been fully described by K. Macleod in Allbutt's "System of Medicine" under the name "epidemic dropsy," and this term has come into fairly general use, until it covers, I think, too many obscure dropsies to have any exact meaning. There is no evidence to prove that the Mauritius "epidemic dropsy" bore any relation to famine-dropsy, and many material points suggest that it was due to other causes. Macleod lays stress on the fact that it was a febrile disease, not confined to the impoverished and sickly. He states that Calcutta was undoubtedly the centre from which the disease was carried to other places—to Dacca, Sylhet, Shillong, and Mauritius. Calcutta was not affected by the Madras famine of 1877, but in that year epidemic dropsy appeared in the southern suburbs of Calcutta, in the island of Mauritius, and also in the tea-gardens of Assam and Sylhet, where it remained an unsolved puzzle with many diagnostic labels, such as kala-azar and beri-beri, until Giles reported in 1890 that the so-called "unhealthy" gardens in Assam were full of coolies suffering from ankylostomiasis. The connexion of the Mauritius dropsy is more direct with these "unhealthy" gardens than with the famine-dropsy of Madras.

After this time no interest seems to have been taken in famine dropsy outside of India where a good deal of work was quietly carried on. The elucidation of the problems of beri-beri brought other forms of dropsy under investigation, and from time to time the term "epidemic dropsy" was used to describe food deficiency œdemas which did not fall into line with beri-beri. Lieutenant-Colonel E. D. W. Greig, I.M.S., devoted a good deal of attention to this problem. In January, 1914, a committee of inquiry, over which Colonel Greig presided, gave in the course of a report to the India Office on beri-beri in Lebong the following classification of known deficiency diseases:—(1) beri-beri; (2) ship's beri-beri; (3) epidemic dropsy; (4) scurvy. With the war history becomes too modern to necessitate more than the briefest references. The first appearance of famine-dropsy during the war was at Lille in October, 1914. The Germans had occupied and stripped the town, many of its inhabitants had nothing to eat except potatoes. This dietary produced many cases of a general anasarca without albuminuria. From 1915 onwards the disease was observed among the famine-stricken populations in Galicia and Poland, and in German prison camps.

HEALTH CONDITIONS IN WEIHAIWEI.

IN his report for 1919 the Commissioner, Sir James H. Stewart Lockhart, K.C.M.G., says that the general health conditions of the European residents and visitors during the summer were very good, the only cases of any importance requiring treatment being ten cases of dysentery, only three of which were serious. Among the Chinese population there was a sharp outbreak of cholera during August and September. The outbreak was not peculiar to this territory, as cholera was widespread throughout the north of China and extended as far as the island of Formosa, where the disease was especially virulent. In a territory with an area of 285 square miles and a population of 150,000 inhabiting more than 300 villages the situation was not an easy one to deal with effectively, but Dr. W. McN. Muat, the senior medical officer, with the small medical and sanitary staff under his control, did all that was possible in the circumstances, and deserves great credit for the skill and tact with which he dealt with a very trying situation. The treatment adopted was that of saline transfusion, and of the 232 cases treated the rate of mortality was 22·8 per cent. The greater number of these cases arrived in hospital in a moribund condition; but many being clothed in their burial garments still recovered. Three transfusion stations were established and were much appreciated by the Chinese. Jemadar Siddiq Ahmed, Sub-Assistant Surgeon, attached to the detachment of the 1st XVIII. Infantry stationed there, rendered Dr. Muat great assistance. His services, which were volunteered, proved of great value and were very much appreciated. The native Chinese medical assistant, Mr. Lu, and the other Chinese attached to the hospital worked day and night during the epidemic and deserve special recognition. The medical staff was strengthened by the arrival in December of Dr. J. E. Barnes, who was appointed to be junior medical officer and a medical officer of health for the territory of Weihaiwei.

Progress has been made with improvements which are being carried out on the Island of Liu Kung in order to make it a health resort in every way satisfactory for the navy, and the erection of the model village for the housing of Chinese employed by the naval authorities has been completed. Surgeon-Commander J. R. Muir R.N., who discharged the duties of medical officer of health on the island in a most efficient manner and who was a strong supporter of the improvements mentioned, left for home and was succeeded as M.O.H. by Surgeon-Commander P. L. Croabie, R.N. The highest barometric reading obtained was 30·864 in March and the lowest 29·294 in the same month, the average monthly range being 0·723. The highest and lowest temperatures were 95° F. in June and August and 9° F. in February. Rain or snow fell on 54 days, the total collected being 18·17 inches. As a result of this abnormal drought the crops were almost a total failure.

REPEATED DREAMS.

THE following description of a series of dreams, or a dream-sequence, has been sent to us by a correspondent who, although not a medical man, is both by knowledge and by daily occupation in constant contact with medical thought. His object in sending us the detailed account is mainly to know whether such documents, stated accurately and accompanied by a close relation of accompanying circumstances—e.g., usual habits and transgression from usual habits in respect of food, drink, hour of retirement, employment of time during the day or during the time immediately preceding retirement—would be likely to assist the practical neurologist. The writer states that the dream-sequence has been built up dream by dream, and latterly sometimes dreamt in its entirety, that it has been an affair of the last 30 years, and represents a constantly repeated actual experience.

Some 30 years ago the sleeper began every night to dream that he wandered out of a great library into a huge cellar or garret full of piled-up volumes which he had lost sight of, wished ardently to re-possess and refer to, but could not somehow touch or decipher. He felt a sense of restraint and discomfort, and the black soft dust on and round the books was choking. Doubtless at this point he was unconsciously exercising inhibition of urine, and, having succeeded, he generally became easier and wandered back into the first library, which had now grown like that of Monsieur d'Astragale in "La Cuisine de la Reine Pédocque." It was paved with black and white squares (lozenge-wise) and surrounded by orreries, astrolabes, and ancient globes. The books on the shelves suggested the brown folios in the Bodleian, and there was a sense of light in the room and of relief in the dreamer. He is, as a matter of fact, much concerned with books and familiar with the Bodleian and other large libraries, but it is the vesicular aspect of these dreams, or slight nightmares, that should be considered rather than the origin of the scenario.

Dream 2 probably began to be dreamed after dream 1 just described, though of this the sleeper is not sure. In dream 2 the sleeper was at the seaside in late autumn. He shivered at sight of a very full but misty sea and bathed in a swimming-bath full of steaming water.

Dream 3 now added itself to dreams 1 and 2. The sleeper wandered along a wooded river-bank and easily hooked very large fish, not trout, but large flabby creatures that could never be landed and fell off the hook as though their flesh had been boiled. Inhibition doubtless occurred at this point. The urine was retained, and, less anxious, the sleeper went up among mountains, where roads ended among heather. Here again came in the sense of confusion and anxiety and there was a struggle to remember the locality and its name. Sometimes, though the sleeper is not sure of this, it was dimly remembered to be near Llyn Crafnant (Wales) or in Wicklow Gap. As this dream 3 closed the sleeper felt that at last he would be able to take this delightful walk, long promised to himself but never yet achieved. The walk was, of course, never

taken, then or inwaking hours. Dream 3 was occasionally succeeded by dream 2.

For a number of years these dreams were dreamt in a sequence, as 1-2-3 or 1-3-2. Dreams 4 and 5 belong to the air-raid period in London. When they hooked on to 1-3, dream 1 had almost disappeared from the sequence. In dream 4 the sleeper visited a country house in a definitely-visioned landscape near a wide river (? Wye, at Symond's Yat) and was fêted by pleasant friends. He then (dream 5) visited in winter a country house in a foggy, much canalised region, where he was agreeably reconciled to friends for many years estranged from him. Dream 6, which probably began to follow on 5 after the air-raid period, was a walk through meadows along a grand curving river (? the Lee between Blarney and Cork), which flowed outside a city of noble-looking spires and collegiate buildings, glowing in sunset or late evening sunshine. The sleeper, an Oxford man, generously understood this to be Cambridge. He then latterly—since perhaps seeing the inner quad at Jesus College, Oxford, which he had never been into before May, 1920—has gone across the city and has entered his own (Oxford) college, passing into a very fine old mediæval quad (non-existent), wondering why he had hitherto not known of it, visiting undergraduates in their rooms, and experiencing the common dream-phenomenon of being back at school late in life.

In dream 7 there are no human beings and the water is only represented by a bath, understood to be for hot water, and reached after a dangerous oblique squeeze along an open gallery with a railing less than 2 feet high. This episode is always part of a house-hunting dream, when the sleeper visits various vacant tenements and pulls up, intensely conscious of his surroundings, in an immense dilapidated hall with a chapel-like roof. The dreamer understands that the rent of this house is low, for it is a little squalid and it is in the south of London among slum-like suburbs. "How well we could have entertained here in the days of our prosperity," he exclaims before waking, but the dust and the dinginess suggest dream 1 and are symbolic of repression and anxiety.

And so for the present, our correspondent states, the sequence ends, but sometimes on waking the sleeper is aware that he has touched on every episode, however lightly, from dream 2 to dream 7.

EPIDEMICS ATTRIBUTED TO A COW.

IN regard to the alarmist story of extensive epidemics due to infection from a cow, which gained currency in the daily press, Dr. J. B. Miller, medical officer of health for the Burgh of Kirkintilloch, tells us that there has been an outbreak of small-pox in the burgh during November, 30 cases, of whom 10 died. Seven of the fatal cases were unvaccinated, 3 (adults aged from 40-60) vaccinated in infancy only; 29 of the series were due to contact with an unrecognised case Three cases of typhus (none fatal) had also occurred, all in a family occupying a dirty, vermin-infested house. In Bearsden (a village eight miles from Kirkintilloch) at the end of 1918 and beginning of 1919 there were over 200 cases (three fatal) of septic sore-throat, attributed by Dr. Lauder Thomson, M.O.H. for the county, after bacteriological examination, to a cow suffering from "weed of the udder." Dr. Miller is doubtless right in thinking that an ingenious journalist has mixed up the two reports.

BLINDING FILM STUDIO LIGHTS.

PUBLIC attention has recently been called to this subject by a decision of the Actors' Association to approach the Ministry of Health on the question of the lights now in use in certain film studios. The Association proposes to approach the Council of British Ophthalmologists. It appears that three separate complaints of the excessive brightness of these lights have come before the Association in a few weeks. In one case—that of a leading young film actress—the effect, according to Sir Anderson Critchett, who was consulted by her, in addition to pain and photophobia, was an actual damage to the sight of one eye, which, however, it was hoped might only be of a temporary character.

The danger to the eyes from exposure to excessively bright light is well known under the names of "electric ophthalmia" and "eclipse blindness." It is twofold: in the first place a conjunctival irritation, accompanied by a good deal of photophobia, comes on a few hours after exposure to bright light—an effect not really serious, but extremely alarming to the patient; in the second place, an actual damage to the macular region of the retina occurs, which in extreme cases may lead to a permanent diminution of vision. The matter is one in which we think the film actors concerned are entitled to protection. It is said that the tendency of late has been to increase the lighting of film studios enormously in this country as a result of American competition, and it is to be hoped that the British Council of Ophthalmologists will lend the weight of their authority to its legal limitation. It is all very well for the film companies to say, as one of them did, that the making of pictures is a business, and that if the artists, who are clearly instructed not to look into the lights, do so out of curiosity, they alone must be held responsible. If the brightness of studio lights is allowed to remain unregulated accidents will certainly happen. The question is, Which is of greater national importance—unrestricted competition with America in the production of films, or the safeguarding of the sight not only of film artists but of any others who might be imprudent enough to look into these lights with unprotected eyes?

GLUTEAL BURSÆ.

To the Editor of THE LANCET.

SIR,—Reading Mr. W. H. Ogilvie's case of gluteal bursæ in your issue of Nov. 20th (Clinical Section, R.S.M.) recalls the case of a middle-aged tailor I saw at Richmond in 1867 and from whom I removed two thickened, flattened and inflamed gluteal bursæ about the size of duck eggs, which were so tender that they prevented him from following his occupation with any degree of comfort.

I am, Sir, yours faithfully,

Abergele, Dec. 1st, 1920. A. BOWES ELLIOTT, F.R.C.S.

FLIES IN A CHILD'S EAR.

To the Editor of THE LANCET.

SIR,—I think the following case must be sufficiently rare to be recorded. On Oct. 7th a woman brought her son (aged 12) to me because he had lately become deaf. Exactly how long this had been she did not know. I examined the boy's ears, finding cerumen in both, and directed the mother to put a few drops of hydrogen peroxide in night and morning and to bring the boy to me again in two days' time. They returned on the 9th, and on syringing the right ear a mass came away, which on examination proved to be five house-flies embedded in cerumen; from the left ear came cerumen only. Both membranes were retracted, and on the floor of the bony portion of the right meatus were granulations, which have since disappeared.

I do not think the boy could have placed the flies in his ear himself, as they were so far in. My partner, Dr. H. R. Fisher, suggests that the eggs were deposited in the boy's ear whilst he slept, and that they went through the larval and pupal stages in the meatus. I think this must be the explanation. I am, Sir, yours faithfully,

Atherstone, Warwick. D. S. PRACY.

Communications, Letters, &c., to the Editor have been received from—

A.—Dr. A. Armstrong, Edinburgh; Dr. W. Attlee, Windsor; Mr. E. L. Atkinson, Lond.; Actors' Orphanage, Lond.

B.—Prof. A. E. Boycott, Lond.; Dr. P. Bartholow, New York; Mr. E. Berliner, Washington; Dr. G. Blacker, Lond.; Dr. A. D. Bigland, Liverpool; Mr. H. Brown, Lond.; Mr. W. G. Ball, Lond.; Prof. J. Borenius, Lond.; Mr. J. Burns, Edinburgh; Dr. C. R. Box, Lond.; Dr. H. Bryn, Trondhiem; Mr. G. Bethell, Lond.; Mr. W. H. Battle, Lond.

C.—Chadwick Trust, Lond., Sec. of; Dr. H. P. Cholmeley, Forest Row; Dr. R. Craik, Lond.; Dr. F. G. Clemow, Constantinople; Dr. W. Cramer, Lond.; Dr. A. M. Cato, Lond.

D.—Prof. N. Dobrovolskaya, Tel-el-Kebir; Mr. H. Dickinson, Lond.; Mrs. V. Donnet, Lond.; Mr. P. Dunn, Lond.; Dr. V. Dickinson. Lond.; Messrs. Down Bros., Lond.

E.—Eugenics Education Society, Lond.; Mr. A. B. Elliott, Abergele; Dr. L. Evans, Lond.; "Eighteen Years in I.M.S."

F.—Dr. W. Fletcher, Kuala Lumpur; Mr. H. A. T. Fairbank, Lond.; Mr. S. Friedberger, Philadelphia; Dr. R. M. Fraser, Belfast.

G.—Dr. W. E. Gye, Lond.; Great Northern Central Hospital, Lond.; Mr. G. R. Girdlestone, Oxford.

H.—Major T. W. Harley, I.M.S., Madura; Mr. E. Harvey, Lond.; Dr. Henson, Lond.; Mr. C. W. Huss, Cardiff; Dr. A. J. Hall, Sheffield; Hunterian Society, Lond.; Messrs. Hempsons, Lond.; Mr. G. Henly, Willenhall; Dr. J. T. Hislop, Wrexham; Hampstead Medical Committee, Hon. Sec. of; Messrs. Hodder and Stoughton, Lond.; Major W. E. Home, R.A.M.C.; Prof. F. G. Hopkins, Cambridge; Harveian Society of London.

I.—Illuminating Engineering Society, Lond.

J.—Dr. F. H. Jacob, Nottingham.

K.—Dr. E. F. Kerby, Lond.; Dr. D. Keilin, Cambridge.

L.—Dr. E. C. Lowe, Southport; Dr. R. B. Low, Lond.; London Dermatological Society; Dr. J. C. G. Ledingham, Lond.; Prof. J. A. Lindsay, Belfast; Dr. Lockhart-Mummery, Lond.

M.—Dr. W. J. Maguire, Dublin; *The Milk Industry*, Lond., Editor of; Messrs. Masson and Co., Paris; Mr. J. E. May, Lond.; Ministry of Pensions, Lond.; Dr. T. W. Mitchell, Hadlow; Ministry of Health, Lond.; Manchester, Chief Constable of; Dr. J. B. Miller, Bishopbriggs; Medico-Psychological Association of Great Britain and Ireland, Lond.

N.—National Alliance of Employers and Employed, Lond.

O.—Dr. J. Oliver, Lond.; Dr. R. A. O'Brien, Lond.

P.—Sir A. Pearson, Lond.; Panel Committee for the County of London; Mr. W. H. Pettifor, Lond.; Dr. F. J. Poynton, Lond.; Poplar Dispensary for the Prevention of Consumption, Lond.; Dr. D. P. Priestley, Lond.

R.—Royal Institution, Lond.; Dr. A. K. Roche, Edinburgh; Dr. S. M. Ross, Derby; Dr. J. D. Rolleston, Lond.; Royal Surgical Aid Society, Lond.; Prof. S. Russ, Lond.; Prof. F. F. Roget, Vandœuvres; Mr. H. B. Roderick, Cambridge; Royal Society of Medicine, Lond.; Sir A. Reid, Bournemouth; Royal Society, Lond.; Royal Sanitary Institute, Lond.

S.—Society of Medical Officers of Health, Lond.; Dr. W. D. D. Small, Edinburgh; Dr. D. Sommerville, Lond.; Dr. H. Sutherland, Lond.; Dr. T. H. C. Stevenson, Lond.; Scientific and Industrial Research Dept., Lond., Sec. of; Société des Sciences Médicales et Biologiques de Montpellier; Dr. S. H. Stewart, Whiteabbey; Dr. H. Stanley Jones, Netley.

T.—Mr. G. Thieme, Leipzig.

V.—Dr. A. L. Vischer, Basel; Mr. H. W. Verdon, Brighton.

W.—Dr. E. Ward, Paignton; Sir B. C. A. Windle, Toronto; Dr. C. H. Warner, Nottingham; Dr. E. W. A. Walker, Oxford; West London Post-Graduate College, Sec. of; Mr. W. A. Winchester, Bristol; Dr. P. Wilde, Bath; Dr. C. White, Lond.; Sir W. I. de C. Wheeler, Dublin; Dr. W. N. W. Watson, Bradford; West London Medico-Chirurgical Society, Hon. Sec.

Y.—Dr. A. G. Yates, Sheffield.

Z.—Dr. Zoeller, Paris.